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15 May 1980

Worldwide Report

ENVIRONMENTAL QUALITY

No. 253

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BRIEFS

LETHAL JAPANESE WASTE IN KOREA--Inchon, Korea, April 15 OP-KYODO--Customs officials in the Korean port of Inchon Tuesday booked a local businessman for illegally attempting to import lethal industrial waste from Japan. Customs officials charged that Kim Du Chong, 60, owner of Seoul's Daeji Industrial Co., tried to import from Japan 101 tons of slime sulfide, a dangerous industrial waste product for which the Japanese Government has forbidden further treatment, falsely reporting that it was arsenic sulfide, an industrial raw material. Customs officials confiscated the slime sulfide, which consists of heavy metals such as copper, zinc, cadmium and antimony. According to the officials, Daeji also imported 1,300 tons of arsenic sulfide from a Japanese copper refinery on six occasions from May 1978 through December 1979, treating it here to produce a raw material for an agricultural chemical. Korean experts claim that even arsenic sulfide is fatal to human beings, noting that Japan has banned retreatment of it since four years ago, although Seoul still permits it. [Text] [Tokyo KYODO in English (no time given) 15 Apr 80 OW]

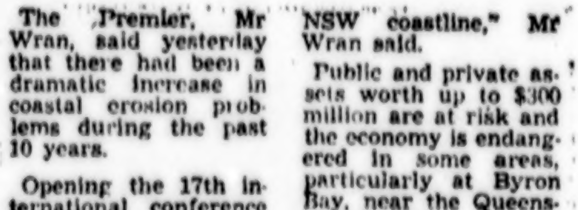
CSO: 5000

AUSTRALIA

NSW PREMIER POINTS TO DANGERS FROM COAST EROSION

Perth THE WEST AUSTRALIAN in English 28 Mar 80 p 20

[Text] Sydney: The NSW Government is considering a proposal to save an estimated $300 million worth of buildings and other property endangered by erosion along the State's coastline.



The Premier, Mr Wran, said yesterday that there had been a dramatic increase in coastal erosion problems during the past 10 years.

Opening the 17th international conference on coastal engineering in Sydney, he said that to ignore the problem would be to invite disaster.

The State was faced with very real and urgent problems in the development of the coastal zone.

Homes and industries were exposed to substantial risk from the forces of nature.

The Government believed it had a responsibility to ensure that future developments on the coastal zone were designed and placed in such a way as to minimise the risk of erosion.

"The past ten years have seen a dramatic increase in coastal erosion problems over the entire length of the NSW coastline," Mr Wran said.

Public and private assets worth up to $300 million are at risk and the economy is endangered in some areas, particularly at Byron Bay, near the Queensland border.

"A study at Byron Bay has revealed that about $14 million worth of assets could be lost to the ocean over the next 50 years," he said.

"The study represented two years of intensive work by a team of coastal engineering experts, who identified the causes of the erosion and have outlined a range of options for combating it."

The sensible and most economic approach was to take remedial steps before a crisis developed, he said.

The Government was examining a proposal for a continuing programme of erosion prevention costing about $3 million a year.

CSO: 5000

AUSTRALIA

PARKS DIRECTOR IDENTIFIES IMPORTANT CONSERVATION AREAS

Perth THE WEST AUSTRALIAN in English 19 Mar 80 p 22

[Text] Canberra: There were six to eight areas of national or international significance on the Australian mainland that would justify a Commonwealth role in their protection, a parliamentary committee was told yesterday.

Professor John Ovington, director of the Australian National Parks and Wildlife Service made the estimate when he appeared before the House of Representatives standing committee on environment and conservation.

The committee is inquiring into the Government's legislative and administrative arrangements for protection of the environment.

Professor Ovington said he believed that the Commonwealth service should be involved only with national parks of national or international standing.

As examples, Professor Ovington quoted the Kakadu national park in the Alligator River region, and the Uluru national park, surrounding Ayers Rock, in the Northern Territory, and the Great Barrier Reef marine park.

There was also a case for the Commonwealth's being involved with south-western Tasmania, he said.

Asked to specify other areas of national and international significance, Professor Ovington said that some of Australia's desert areas were extremely fragile.

There were also areas in WA, some reefs off WA and some of the tropical forests in Queensland.

If an area was to be properly cared for as part of the National Heritage, he thought that the State government also would wish it to be given special treatment.

But this might be beyond the resources of the State.

The chairman of the committee, Mr John Hodges (Lib., Qld) remarked: "There are some States that tell you to keep your nose out of their business."

Professor Ovington said he believed that the States would increasingly welcome the opportunity to co-operate with the federal service.

He agreed that there had been some political problems, but he thought that the situation was improving.—AAP.

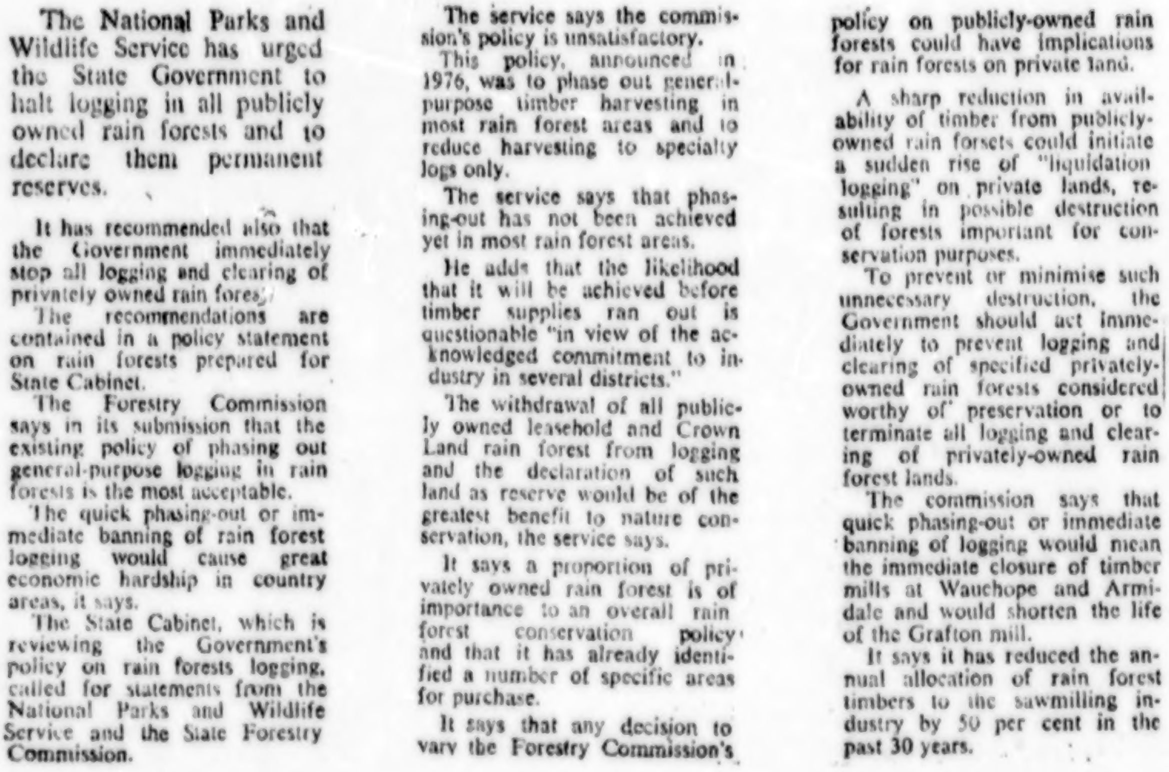
CSO: 5000

NEW SOUTH WALES URGED TO HALT LOGGING IN RAIN FORESTS

Sydney THE SYDNEY MORNING HERALD in English 27 Mar 80 p 9

[Report by Joseph Glascott, Environment Writer]

[Text]



The National Parks and Wildlife Service has urged the State Government to halt logging in all publicly owned rain forests and to declare them permanent reserves.

It has recommended also that the Government immediately stop all logging and clearing of privately owned rain forests.

The recommendations are contained in a policy statement on rain forests prepared for State Cabinet.

The Forestry Commission says in its submission that the existing policy of phasing out general-purpose logging in rain forests is the most acceptable.

The quick phasing-out or immediate banning of rain forest logging would cause great economic hardship in country areas, it says.

The State Cabinet, which is reviewing the Government's policy on rain forests logging, called for statements from the National Parks and Wildlife Service and the State Forestry Commission.

The service says the commission's policy is unsatisfactory.

This policy, announced in 1976, was to phase out general-purpose timber harvesting in most rain forest areas and to reduce harvesting to specialty logs only.

The service says that phasing-out has not been achieved yet in most rain forest areas.

He adds that the likelihood that it will be achieved before timber supplies ran out is questionable "in view of the acknowledged commitment to industry in several districts."

The withdrawal of all publicly owned leasehold and Crown Land rain forest from logging and the declaration of such land as reserve would be of the greatest benefit to nature conservation, the service says.

It says a proportion of privately owned rain forest is of importance to an overall rain forest conservation policy and that it has already identified a number of specific areas for purchase.

It says that any decision to vary the Forestry Commission's policy on publicly-owned rain forests could have implications for rain forests on private land.

A sharp reduction in availability of timber from publicly-owned rain forsets could initiate a sudden rise of "liquidation logging" on private lands, resulting in possible destruction of forests important for conservation purposes.

To prevent or minimise such unnecessary destruction, the Government should act immediately to prevent logging and clearing of specified privately-owned rain forests considered worthy of preservation or to terminate all logging and clearing of privately-owned rain forest lands.

The commission says that quick phasing-out or immediate banning of logging would mean the immediate closure of timber mills at Wauchope and Armidale and would shorten the life of the Grafton mill.

It says it has reduced the annual allocation of rain forest timbers to the sawmilling industry by 50 per cent in the past 30 years.

CSO: 5000

AUSTRALIA

BRIEFS

WATCHDOG COMMITTEE PROPOSED--The Trades and Labor Council has called for the setting-up of a public watchdog committee to monitor environmental review and management programmes and to the effects of development on the environment. A TLC subcommittee said that the watchdog group should include representatives of the CSIRO, the Environmental Protection Authority, the Forests Department, the TLC, industry and commerce and environmental and conservation groups. [Sentence as published] There should be maximum community and environmental group involvement in the preaparation of the programmes and Parliament should not be an automatic rubber stamp for Cabinet decisions. The programmes and environmental impact statements in their present form were not an effective way of ensuring adequate consideration of the environmental effects of project planning. This was because not enough autonomy had been given to those carrying out the studies and because all the information they had gathered and reports they had made were not freely available to the public. [Excerpt] [Perth THE WEST AUSTRALIAN in English 28 Mar 80 p 36]

DIEBACK IN WEST AUSTRALIA--It would cost more than $74 million to effectively restore WA forest affected by jarrah dieback, the Forests Department told the commission. The disease was the greatest disability to forest management in WA and possibly the most complex environmental problem in world forestry. It had already affected 274,000 hectares, or 14 per cent of the total forest area, and an even higher proportion of the active water-supply catchments. Last financial year the department had spent almost $900,000 on various matters associated with the disease. The conservator of forests, Mr B. J. Beggs, said that jarrah dieback had been like a time-bomb in WA forests. It was something of a "take-everything" disease which had adversely affected more than 100 species of flora. Dieback posed a serious threat to the forests and the associated water catchment because of the risk of loss of forest cover. In WA, the related problems between water salinity and dieback were unique in forest management in Australia. [Excerpts] [Perth THE WEST AUSTRALIAN in English 27 Mar 80 p 9]

CSO: 5000

NEW ZEALAND

VIETNAM VETERANS TO GET AGENT ORANGE QUESTIONNAIRE

Defense Minister's Statement

Auckland THE NEW ZEALAND HERALD in English 12 Mar 80 p 5

[Text] **Press Assn Wellington**

A questionnaire seeking information about the possibility of exposure to Agent Orange or other defoliants is being sent to almost 4000 who served with the New Zealand forces in South Vietnam.

Questionnaires should be received from defence headquarters within the next few days.

This follows a recent decision by the Minister of Defence, Mr Gill, and the Minister of Health, Mr Gair, to expand the present survey of Vietnam veterans still serving in the armed forces.

Mr Gill said yesterday that the questionnaires would go to all ex-service personnel who served in Vietnam, at their last known addresses, and to the 900 still serving in the armed forces.

It was important to receive as many returns as possible, including those from people with negative responses, he said. Replies would be treated in strictest confidence.

When the survey was complete the information would be passed to the Health Department for collation and assessment as to what further action was required.

Mr Gill said the Government shared the concern of ex-service organisations at overseas reports of a possible link between exposure to the defoliants used in Vietnam and subsequent illnesses of the veterans and their families.

"I can well understand the concern of all the men who served in Vietnam, and that of their families," he said.

"It would be misleading of me, however, if I gave the impression that the Government is in a position to answer quickly the questions they have asked."

Veterans Group Urges Boycott

Wellington THE EVENING POST in English 15 Mar 80 p 10

[Text] An association for Vietnam veterans has advised its members to boycott the Ministry of Defence's Agent Orange questionnaire.

The national secretary of the Korea and South-east Asia Forces Association (Mr Vic Johnson) said from Whakatane this week that the association was recommending to its members they they not respond to the questionnaire.

He also said that the association was not being fully informed on what was happening. The Minister of Defence (Mr Gill) said three days ago, when he released the questionnaire, that the association was being kept fully informed on the measures being taken.

The association had written to the Minister asking him to release the computer printout detailing fixed wing plane spraying operations in Vietnam. The American Embassy had confirmed to his group that details of the defoliant spraying in the Vietnam years had arrived in the country.

He had written to the Minister on March 3 and so far the letter had only been acknowledged.

Until the association has a chance to compare its own information with the official printout, it feels that the veterans cannot reply to the questionnaire in an informed way.

Mr Johnson's specific objections to the questionnaire are that it takes no account of the fact that further claims based on Agent Orange exposure are going to take place in the future.

Abuse

"The questionnaire could be abused for supposed gain. A person may consider that he will stand in good stead for future war pensions claims if he fills it in a certain way," he said.

His other objection is that veterans may not necessarily realise that conditions such as behavioural disorders could be connected to Agent Orange.

The questionnaire is extremely brief and apart from asking dates and units served with, there are only six short questions.

They are: "Do you think you were exposed to Agent Orange or other defoliants? Have you suffered any unexplained illnesses since you were in Vietnam? Do your family suffer from any unexplained illnesses? Have your or your family required medical attention for any unexplained illnesses? If yes, name the doctor who treated you. Do any of your children suffer a deformity? If yes, list the deformities and please give the names of doctors who could be consulted."

The final question is: "Do you have any comment regarding Agent Orange? Or anything else you wish to note in relation to this problem?"

Negative

"We are not being obstructive," Mr Johnson said. "We feel that the questionnaire is negative. It can be of no use to the Minister of Defence unless it contains full information and we don't believe our members can supply that right now."

The association is also concerned that possible health hazards connected with Agent Orange did not only arise with soldiers who were sprayed by overflying aircraft.

Soldiers drank water that had come down through the defoliated trees and from streams in country where dioxin was in the soil, and little account was being taken of this.

Gill: No Assurance Possible

Wellington THE EVENING POST in English 15 Mar 80 p 48

[Excerpt]

THE MINISTER of Defence (Mr Gill) said yesterday he had to assume that anyone who had been in Vietnam during the war could have been affected by the defoliant Agent Orange.

"We had been hoping to reassure the vast number of our people that they need have no fears," he said.

"But we found gaps in intelligence material and we can't give that assurance I'm afraid.

"We have to assume that anyone in Vietnam could have been affected by Agent Orange."

Mr Gill has sent a 12-page United States Defence Department printout of fixed-wing aircraft operations in Vietnam to the national secretary of the Korea and South-east Asia Forces Association (Mr Vic Johnson), of Whakatane.

But there are no records of operations by US helicopters, Vietnamese aircraft or the use of manpacks to spray Agent Orange.

This is why Mr Gill says he cannot give the assurances he had hoped to.

Mr Johnson said this week that members of his association who served in Vietnam had been asked not to fill in the questionnaire on health problems sent out by the Ministry of Defence.

Describing the questionnaire as "negative," he said it could be of no use unless it contained full information which he did not believe veterans could supply right now.

Mr Gill said the questionnaire basically asked Vietnam veterans: Have you had any health problems?

"If they have, we'll be able to follow it up. When we know the nature of the problem we can start investigating individual cases in detail."

CSO: 5000

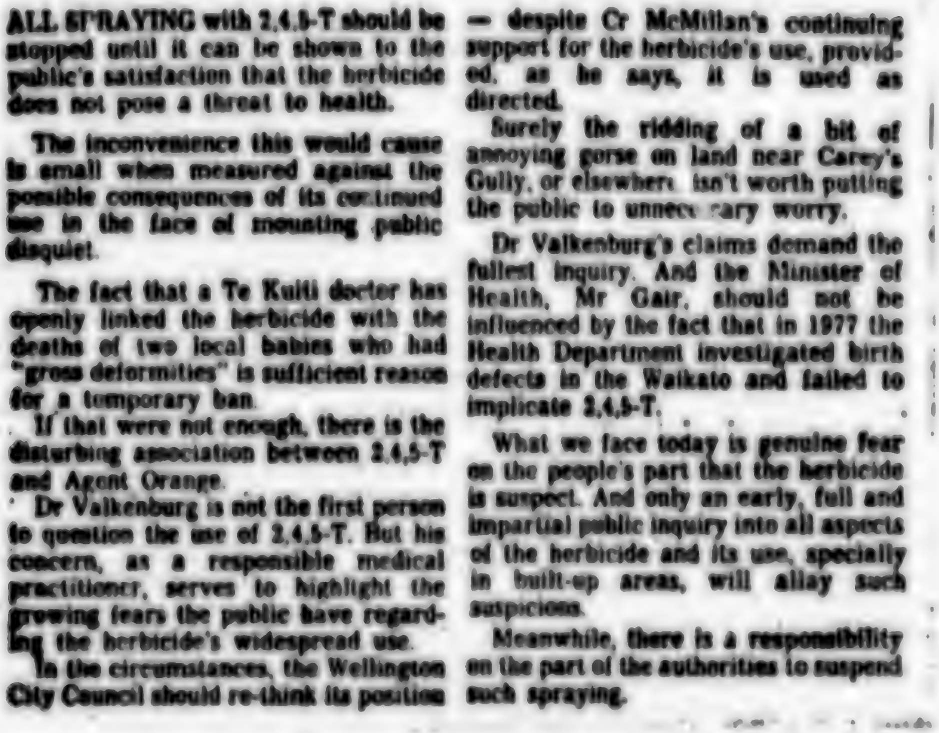
HERBICIDE 2,4,5-T AROUSES WIDESPREAD CONTROVERSY

'EVENING POST' Editorial

Wellington THE EVENING POST in English 5 Mar 80 p 4

/Editorial: "Suspend Spraying"/

/Text/



ALL SPRAYING with 2,4,5-T should be stopped until it can be shown to the public's satisfaction that the herbicide does not pose a threat to health.

The inconvenience this would cause is small when measured against the possible consequences of its continued use in the face of mounting public disquiet.

The fact that a Te Kuiti doctor has openly linked the herbicide with the deaths of two local babies who had "gross deformities" is sufficient reason for a temporary ban.

If that were not enough, there is the disturbing association between 2,4,5-T and Agent Orange.

Dr Valkenburg is not the first person to question the use of 2,4,5-T. But his concern, as a responsible medical practitioner, serves to highlight the growing fears the public have regarding the herbicide's widespread use.

In the circumstances, the Wellington City Council should re-think its position — despite Cr McMillan's continuing support for the herbicide's use, provided, as he says, it is used as directed.

Surely the ridding of a bit of annoying gorse on land near Carey's Gully, or elsewhere, isn't worth putting the public to unnecessary worry.

Dr Valkenburg's claims demand the fullest inquiry. And the Minister of Health, Mr Gair, should not be influenced by the fact that in 1977 the Health Department investigated birth defects in the Waikato and failed to implicate 2,4,5-T.

What we face today is genuine fear on the people's part that the herbicide is suspect. And only an early, full and impartial public inquiry into all aspects of the herbicide and its use, specially in built-up areas, will allay such suspicions.

Meanwhile, there is a responsibility on the part of the authorities to suspend such spraying.

Restricted Use Supported

Wellington THE EVENING POST in English 4 Mar 80 p 4

[Text]

New Zealand chemical applicators would support restricted use rather than a total ban of the herbicide 2,4,5-T.

This information came from Mr Tom Johnson, the executive officer of the chemical applicators' section of the New Zealand Contractors' Federation today.

Chemical applicators were opposed to any ban of the chemical, Mr Johnson said, but "if the suggestion ever came of complete abolition they would rather see the interim continued use by registered applicators."

The section had about 140 members throughout the country, only about 12 of whom were not registered with the Agricultural Chemicals Board as applicators. Registration showed that an applicator had "made the effort to really learn about the chemical," Mr Johnson said.

Committee members had a total of 170 years' experience applying 2,4,5-T between them. One or two of them had been using it for more than 20 years.

Mr Johnson said, "2,4,5-T generally is the chemical that is used in open country way out in the backs of farms where they're breaking in agricultural land. Sometimes, of course, it's used in places like Carey's Gully." Other ways of eradicating gorse were not on because it would take too long.

A survey had been taken last year of contractors' wives — "probably the most substantial evidence that anybody has" — and 44 women with an average age of 35 had experienced no abnormal pregnancies or birth defects, Mr Johnson said.

If the public inquiry called for brought about a ban to the chemical's use the applicators would not lose their jobs but "there'd be a substantial reduction in the amount of work they could do in the agricultural field."

Mr Fred Marsh, director of the Wellington Noxious Plants Society, which employs 152 temporary employment programme workers, was not prepared to say how many workers would be out of work if 2,4,5-T was banned.

The chemical has been used before by the workers in the eradication of gorse, said Mr Marsh. Different chemicals were used in the eradication of other plants however.

Mr Marsh said he felt the Press was becoming over-emotive over the issue of 2,4,5-T, and was therefore reluctant to comment any further on the issue.

The chairman of the Wellington Noxious Plants Authority (Mr S F Nossiter) said it is just about impossible to farm without using the chemical 2,4,5-T.

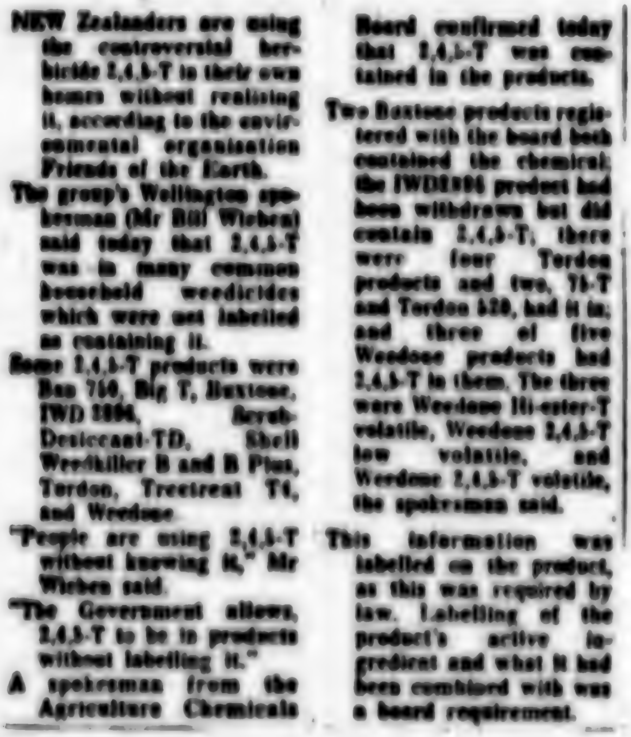
Mr Nossiter, who has been farming for "sixty-odd years," said 2,4,5-T has brought the country back into production as far as gorse eradication went.

He said, however, that it was very indefinite that TEP (temporary employment) workers employed by the authority would be laid off. Other work with noxious plants would probably be found for the workers.

Product Labeling Urged

Wellington THE EVENING POST in English 6 Mar 80 p 32

[Text]



NEW Zealanders are using the controversial herbicide 2,4,5-T in their own homes without realising it, according to the environmental organisation Friends of the Earth.

The group's Wellington spokesman (Mr Bill Wiebe) said today that 2,4,5-T was in many common household weedicides which were not labelled as containing it.

Some 2,4,5-T products were Ban 710, Big T, Buxtone, IWD 2896, Scrub-Desiccant-TD, Shell Weedkiller B and B Plus, Tordon, Treetreat T4, and Weedone.

"People are using 2,4,5-T without knowing it," Mr Wiebe said.

"The Government allows 2,4,5-T to be in products without labelling it."

A spokesman from the Agriculture Chemicals Board confirmed today that 2,4,5-T was contained in the products.

Two Buxtone products registered with the board both contained the chemical; the IWD2896 product had been withdrawn but did contain 2,4,5-T; there were four Tordon products and two, 75-T and Tordon 520, had it in; and three of five Weedone products had 2,4,5-T in them. The three were Weedone Hi-ester-T volatile, Weedone 2,4,5-T low volatile, and Weedone 2,4,5-T volatile, the spokesman said.

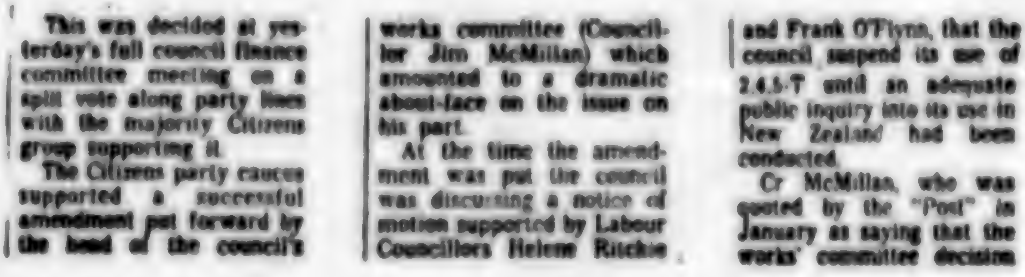
This information was labelled on the product, as this was required by law. Labelling of the product's active ingredient and what it had been combined with was a board requirement.

Urban Spraying Suspended

Wellington THE EVENING POST in English 8 Mar 80 p 3

[Report by Karen Brown]

[Excerpt] Brooklyn residents have won a battle. Public pressure has forced the Wellington City Council to abandon indefinitely its use of 2,4,5-T in urban--but not all rural--areas of the city.



This was decided at yesterday's full council finance committee meeting on a split vote along party lines with the majority Citizens group supporting it.

The Citizens party caucus supported a successful amendment put forward by the head of the council's works committee (Councillor Jim McMillan) which amounted to a dramatic about-face on the issue on his part.

At the time the amendment was put the council was discussing a notice of motion supported by Labour Councillors Helene Ritchie and Frank O'Flynn, that the council suspend its use of 2,4,5-T until an adequate public inquiry into its use in New Zealand had been conducted.

Cr McMillan, who was quoted by the "Post" in January as saying that the works' committee decision to hand-spray gorse on its Carey's (Te Kopahou) Gully land was "final" and that there was "no rhyme or reason" why it should reconsider, has changed his mind, however.

Opposed to Cr Ritchie's motion, he put forward this amendment.

"That the council suspend its use of 2,4,5-T spray in the urban areas (those areas other than the rural areas as shown in the District Scheme Review) of the city and in those areas of councilowned land in the rural zone to the east of the ridgeline extending from Mt Kau Kau to Johnston's Hill. That 2,4,5-T spray be not used in the Te Kopahou Valley, Carey's and Spooky Gullies."

He had two points to make on the matter. The first was that there was no substantiated medical or scientific evidence to support the view that use of the chemical was harmful to humans.

The second was public concern.

"I would agree that there is public concern," Cr McMillan told the council. "I don't believe it should be ignored."

In the same way that the concern of urban dwellers was to be heeded, "so too must the concern of the farming community, whose members state quite categorically that the viability of their farms will be adversely affected if a total ban on 2,4,5-T were to be introduced," he said.

No alternative ways of controlling gorse on council land were put forward.

Government Group Study

Auckland THE NEW ZEALAND HERALD in English 25 Mar 80 p 5

/Text/

Press Assn Wellington

A standing subcommittee of agriculture and health experts is to be set up by the Agricultural Chemicals Board to help to assess information on the health effects of pesticides and herbicides, including 2,4,5-T.

The committee's first task would be to review recent Swedish reports which suggest applicators of phenoxy acid herbicides (including 2,4,5-T, 2,4-D and MCPA) and chlorophenols had an increased rate of soft tissue sarcoma and malignant lymphoma, two uncommon forms of cancer, the board chairman, Mr P. J. Clark, said yesterday.

The board was not aware that any foreign government had taken action on the studies, and Mr Clark said he understood the Swedish Government was reassessing the matter.

"The subcommittee will increase the range of technical expertise available to the board, and continue to ensure that risks as well as benefits of agricultural chemicals will be considered," said Mr Clark.

"As part of its continual review of agricultural chemicals, the board met on Friday and considered a substantial amount of information prepared in the United States by parties to the present 2, 4, 5-T debate. Particular attention was paid to the Swedish data, and further information is being sought for the subcommittee to consider.

"The board has asked to be notified urgently of the outcome of a new review of 2,4,5-T by the United Kingdom Advisory Committee on Pesticides," Mr Clark said.

The board was also preparing a summary of the evidence on which it had based its decision not to place further restrictions on the use of 2,4,5-T in New Zealand in the meantime. This information would be made public soon.

The Department of Health was also sponsoring a study to see if registered applicators of agriculture chemicals in New Zealand had had more birth defects in their families than a comparable control group.

Doctor's Claim Refuted

Wellington THE EVENING POST in English 3 Apr 80 p 1

[Text] The Te Kuiti mothers of two badly deformed babies were not "significantly exposed" to the herbicide 2,4,5-T or any other herbicide during their pregnancies, extensive investigations have established.

This month, Dr J Valkenberg, of Te Kuiti, linked the herbicide with the death of two babies born with gross deformities. He said the babies' mothers had been exposed to the herbicide from agricultural and roadside spraying at a crucial time of their pregnancy.

A report on the extensive investigations by health and agriculture officials was released today by the Minister of Health (Mr Gair) who said that although the outcome was "satisfactory," there was still a need for an open mind on the issue.

The investigations could not establish that either women had been significantly exposed to 2,4,5-T or any other pesticide at any time during her pregnancy, he said.

It was up to general practitioners to notify the Medical Officer of Health of the possibility of environmental factors in any congenital abnormalities, and if this had been done without wide publicity, "much undue anxiety" would have been avoided, Mr Gair said.

The report said that one of the women, codenamed Mrs A returned home from a trip to Hamilton and noticed a "strong smell" some time during the eighth and tenth weeks of her pregnancy. No spraying operations were noticed at the time, but on telephoning the Maori Affairs Department she was told that spraying had taken place at that time on departmental land.

Ministry of Agriculture and Fisheries officials found that a nine-hectare block of land had been sprayed aerially with 2,4,5-T five or six months before the baby's birth. The land is about two kilometres from the house of Mrs A.

No evidence of plant damage was found, but the report said: "The human nose is an extremely sensitive detector of some odours, and it is known that the odour associated with 2,4,5-T spraying can be detected at concentrations too low for plant damage to occur."

"However, it may be concluded with some confidence that there is not evidence of any significant exposure of Mrs A to 2,4,5-T," the report said.

It also said that if there had been any environmental factor likely to cause the baby's particular abnormality, then it was likely that it would have occurred within the first seven weeks of pregnancy.

The second woman, Mrs B, reported noticing a smell of what she considered to be weedkiller over a three-day period during the 12th to 15th weeks of her pregnancy. She also noticed that some plants in her immediate environment had died.

She believed the smell could have come either from a plane passing over her Te Kuiti home, which is near the local airstrip, or from roadside spraying.

Investigations detailed in the report showed that no roadside spraying had been done in the area last year. Paraquat was the only chemical used for roadside spraying, and the only council spraying that had occurred was "spot" spraying of 2,4,5-T in a nearby park in March and April, 1978.

There had been helicopter spraying, however, of 2,4,5-T on the Maori Affairs block about a kilometre from her house, in November, 1978 — 11 months before her deformed baby was born.

On plant damage, the Ministry of Agriculture and Fisheries officers attributed signs of leaf curl on one tree to possible herbicide contamination which, it said, could have occurred in the last month or two only.

"In view of the lack of evidence of either nearby spraying or plant damage during Mrs B's pregnancy, it cannot be concluded that there are grounds for believing that she was significantly exposed to herbicides.

Manufacturer Hits 'Hysteria'

Wellington THE EVENING POST in English 31 Mar 80 p 5

[Text] New Zealand's Ivon Watkins-Dow, manufacturers of 2,4,5-T, say they are fighting a principle: not to give up a chemical that has been proven safe.

But, "if there was reasonable doubt by our scientists on the basis of our information" the company would be prepared to withdraw 2,4,5-T from the market.

These were the words of IWD general manager Mr Ron Bollen in an interview with the "Post" today.

The debate over the safety of 2,4,5-T "boiled up" three months ago with Wellington's controversy over whether the city council should spray its own land with the chemical.

The matter was resolved this month when public pressure forced the council to abandon its spraying in urban but not all rural areas.

That public pressure has forced the multi-million dollar IWD company to employ a Wellington public relations firm to counter the "adverse publicity" surrounding the chemical.

The firm will "assist us in writing technical material in a way that is better understood by the layman," said Mr Bollen.

While the parent Dow company had elected to fight a temporary United States ban on the chemical's use, IWD "won't give up the product until it's been proven conclusively that 2,4,5-T is a danger to public health."

But Mr Bollen firmly put the lid on suggestions that it was so safe that a person could drink it, by saying: "Nobody in their right mind would drink it. It's a poison."

The unwillingness to bow to public pressure and "hysteria" and give up the mainstay of the company — and New Zealand's agriculture's — wellbeing, was the "tens of millions of dollars" and 10 to 15 years needed before an alternative active ingredient to dioxin could be found, Mr Bollen said.

The company's total sales last year were "in the order of $34,000,000", about one third of this amount being revenue from the company's non-agricultural products.

While Mr Bollen would not say how much money the relatively young company made out of 2,4,5-T, "it's an important product to our company," he said.

He contested a figure — $600,000 — released recently by the Friends of the Earth environmental group as the cost to the company per year of keeping its product on the market.

"That's a load of hogwash. It's much lower than that. Our total research budget is probably in that order of magnitude."

But beyond the cost and time involved in finding an alternative equally efficient product as 2,4,5-T for selectively killing gorse, was the principle involved.

"Why give up something that's proven to be safe because of public pressure? If we can't defend 2,4,5-T with the amount of technical data that's been written on this project, then where is science going?" Mr Bollen said.

Asked whether it was the manufacturing company or the public who should be responsible for proving the product safe for use, Mr Bollen said the company had already proved it safe before marketing it.

"2,4,5-T has been in existence for more than 30 years and in that time there's been no proven case against it. It's probably amongst the most researched of chemicals in the world."

If the power of public pressure was sufficient to have a product removed from the market "we would never have anything on the market."

The legal level of dioxin in 2,4,5-T was 0.1 parts per million. IWD's product contained it at a concentration of 0.01 — 0.02 ppm which was diluted down before application between 30 and 40 times with water, he said.

Plea for Objectivity

Wellington THE EVENING POST in English 7 Apr 80 p 4

[Text] The manufacturer in New Zealand of 2,4,5-T says he has no intention of allowing political innuendo, bad science or unsubstantiated claims to drive safe and necessary products from the market.

The managing director of Ivon Watkins-Dow, Mr R F Bollen, made a plea today for "rational and dispassionate examination of all the evidence" concerning 2,4,5-T.

The time had come, he said, for reason and objectivity to replace emotion.

"My company and its directors are extremely concerned that the wave of emotive and dramatic stories in the media about 2,4,5-T is causing quite unnecessary fear, anxiety and suspicion.

"We do not deny the right of the media to coverage of what has clearly become a significant public issue. But we are worried that a continuing stream of dramatic and negative material is creating a climate of emotionw hich will inhibit reasonable, disappasionate discussion," said Mr Bollen.

Mr Bollen said there had been a story about a Whakatane pharmacist who claimed to have found a link between 2,4,5-T and diseased animal tissue.

No evidence

"The story provided no evidence for this, nor has the pharmacist been prepared to make his evidence available for scientific assessment."

There had been a story about a Paeroa farmer who believed dioxin was transmitted to humans by honey from bees which fed on sprayed flowers.

"The fact is," said Mr Bollen, "that there is ample evidence to show that dioxin is not cumulative in the food chain."

A Wellington city councillor had publicly claimed to have identified a cluster of birth deformities in a rural area outside the city.

"We are still waiting for her evidence and so is the Health Department," said Mr Bollen.

And a member of Parliament had said that the "rampant and uncontrolled use of 2,4,5-T can be likened to an aggravated assault, particularly on our women, mothers-to-be and unborn children."

"Such a statement," said Mr Bollen, "is quite unjustifiably extravagant and unnecessary. The use of 2,4,5-T is not rampant. It is carefully planned and controlled under strict safety and application guidelines. Nor does its application resemble anything like physical assault."

Risk

Mr Bollen said the risk of any kind of hazard from the use of 2,4,5-T was infinitesimal.

"We are so conscious of our safety record as manufacturers that we have stated categorically that we will withdraw 2,4,5-T from the market immediately there is any conclusive proof that it is injurious to human health when used as instructed and for the purpose for which it is intended.

"With the greatest respect to the authors of the many recent statements, I suggest that none has gone about the task of gathering his information with any respect for scientific objectivity," said Mr Bollen.

Farmers Must 'Fight Back'

Auckland THE NEW ZEALAND HERALD in English 28 Mar 80 p 5

[Text] Press Assn Nelson

A national farming leader told farmers yesterday that, unless they were prepared to defend the use of the herbicide 2,4,5-T with sound arguments, they could say goodbye to its use in future.

The senior vice-president of Federated Farmers, Mr R. Storey, told members of the Nelson provincial executive: "It's probably true that, if you serve up emotional statements long enough, you can win any fight."

But he urged farmers to fight, with informed argument, to continue to use the gorse-control chemical.

"I think we must talk to Friends of the Earth and other environmentalists and show them the true situation."

In the Wairarapa, a group of environmentalists was being taken to a block infested with gorse and tuberculosis-ridden opossums and shown what the chemical meant to farming.

Mr Storey challenged farmers to familiarise themselves with the chemicals they were using and carry out similar exercises to replace conjecture with information.

"We cannot claim that any chemicals are completely safe. All we can say is that they are used with minimal risk.

"Farmers must make themselves conversant with the arguments over these chemicals and be prepared to fight back against environmentalists intelligently," Mr Storey said.

"If you let the Friends of the Earth fight the next local elections on the basis of banning 2,4,5-T, as they are talking of doing, without fighting back, then you might as well say goodbye to the use of that chemical."

Field Trip Organized

Auckland THE NEW ZEALAND HERALD in English 2 Apr 80 p 3

[Text]

Staff Reporter Wellington

The Federated Farmers took its case in support of the controversial herbicide 2,4,5-T to the road yesterday.

Concerned at the growing unease about the chemical, federation members took a group of politicians, environmentalists and officials to the Wairarapa to put their side of the controversy.

The visitors were shown productive land which farm officials said would quickly revert to gorseland if the herbicide were banned.

Farmers who have been using the herbicide for the past 30 years explained there had been no adverse effects on their health, or the health of their families.

Overseas Funds

They were also adamant that a ban on the herbicide would have disastrous effects on the New Zealand economy.

Farmers in the Homewood-Langdale area on the Wairarapa coast said there were about 100 million stock units in New Zealand, grossing about $3500 million a year in overseas funds.

There were no accurate figures available about the area of land reclaimed from gorse since the introduction of the herbicide in 1950.

But the farmers said an idea of the income generated from former gorseland was the $2.3 million in export earnings from one 5260-hectare block, near Featherston.

This example, they said could probably be repeated 10 times throughout the country.

The farmers said that if the recent impetus given by the Government to gorse eradication were continued it was probable that within the next 10 years there would be few pockets of the weed left.

A Masterton County Council noxious weeds inspector summed up the farmers' case by saying: "Certainly without this weapon farmers out here would be out of business."

While many of the farmers were quite happy to see an inquiry into the use of 2,4,5-T, they did not want its use banned while the inquiry was under way.

Field Trip

Several of them also favoured restricting the use of the herbicide in built-up urban areas.

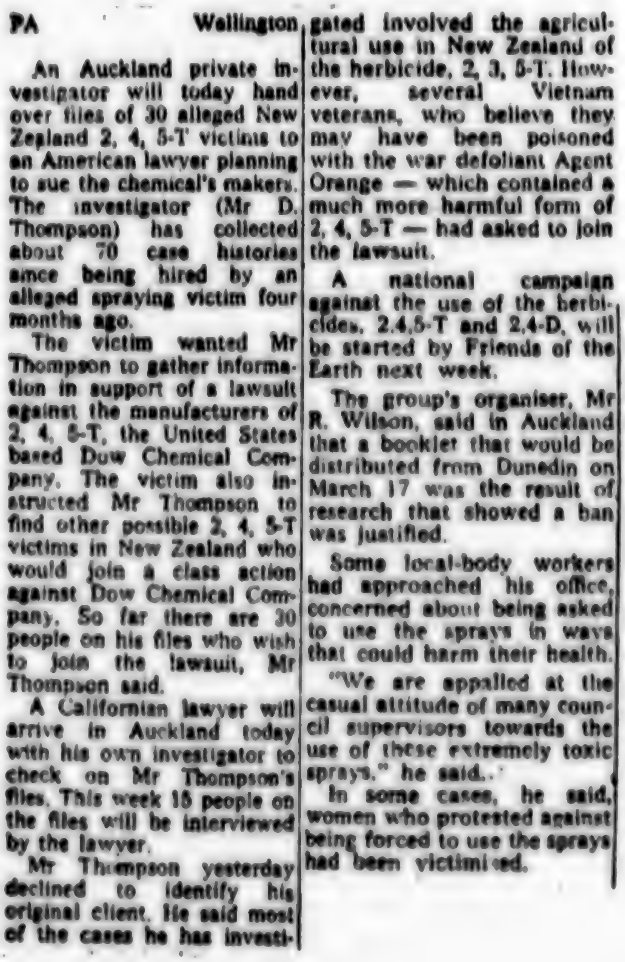
The parliamentarians taken on the field trip were: Messrs H. N. Austin (Govt—Bay of Islands), R. L. Bell (Govt — Gisborne), C. B. Townshend (Govt—Kaimai), J. H. Falloon (Govt—Pahiatua), the Hon F. M. Colman (Oppn—Pencarrow), F. D. O'Flynn (Oppn—Island Bay) and Sir Basil Arthur (Oppn—Timaru).

One of the strongest critics of 2,4,5-T on the trip was a Wellington city councillor, Mrs Helen Ritchie. She said the trip had not changed her opposition to the herbicide.

Suit Against U.S. Firm

Christchurch THE PRESS in English 10 Mar 80 p 6

[Text]



PA Wellington

An Auckland private investigator will today hand over files of 30 alleged New Zealand 2, 4, 5-T victims to an American lawyer planning to sue the chemical's makers. The investigator (Mr D. Thompson) has collected about 70 case histories since being hired by an alleged spraying victim four months ago.

The victim wanted Mr Thompson to gather information in support of a lawsuit against the manufacturers of 2, 4, 5-T, the United States based Dow Chemical Company. The victim also instructed Mr Thompson to find other possible 2, 4, 5-T victims in New Zealand who would join a class action against Dow Chemical Company. So far there are 30 people on his files who wish to join the lawsuit, Mr Thompson said.

A Californian lawyer will arrive in Auckland today with his own investigator to check on Mr Thompson's files. This week 15 people on the files will be interviewed by the lawyer.

Mr Thompson yesterday declined to identify his original client. He said most of the cases he has investigated involved the agricultural use in New Zealand of the herbicide, 2, 3, 5-T. However, several Vietnam veterans, who believe they may have been poisoned with the war defoliant Agent Orange — which contained a much more harmful form of 2, 4, 5-T — had asked to join the lawsuit.

A national campaign against the use of the herbicides, 2,4,5-T and 2,4-D, will be started by Friends of the Earth next week.

The group's organiser, Mr R. Wilson, said in Auckland that a booklet that would be distributed from Dunedin on March 17 was the result of research that showed a ban was justified.

Some local-body workers had approached his office, concerned about being asked to use the sprays in ways that could harm their health.

"We are appalled at the casual attitude of many council supervisors towards the use of these extremely toxic sprays," he said.

In some cases, he said, women who protested against being forced to use the sprays had been victimised.

CSO: 5000

BRIEFS

CONSERVATION STRATEGY--New Zealand does not suffer from any of the major problems identified by a world conservation strategy, the Minister of Lands, Forests and Environment (Mr Venn Young) said this week. Mr Young was launching the strategy at a Press conference at Parliament. Similar press conferences were held in the capitals of over 30 other countries. The strategy is the culmination of two years of work by over 100 countries. It deals with problems such as deforestation, desertification, depletion of fisheries, soil erosion and the genetic diversity of plants and animals important for human life. "We do not have the major problems of soil erosion and degradation of catchment areas and watersheds," Mr Young said. "We do not suffer the effects of encroaching deserts or over-exploitation of the land. We have thankfully avoided the worst effects of industrial and commercial pollution and with new flexible forest management policies we have reached a good balance between production and conservation. In addition we have, over several years, made great advances in our environmental and protection procedures and in implementing anticipatory environmental policies." /Text/ /Wellington THE EVENING POST 8 Mar 80 p 15/

AIRBORNE CHEMICAL LEVELS--The levels of chemicals in the air to which workers may be safely exposed each day are outlined in a new Health Department booklet. The booklet is "Threshold Limit Values," and is available at district health offices. The assistant director of public health (Dr John Stoke) said threshold limit values referred to the safe airborne concentrations of substances. He said levels should be as far as practically possible below this. Personal protective equipment should be used as a last resort after all engineering precautions had been taken to reduce the exposure level. /Text/ /Wellington THE EVENING POST 7 Mar 80 p 9/

CSO: 5000

PEOPLE'S REPUBLIC OF CHINA

PROTECTING NATURAL ENVIRONMENT, RESOURCES CALLED URGENT TASK

Guangzhou NANFANG RIBAO in Chinese 20 Mar 80 p 3

[Article by Yu Wenqi [0060 2428 4388]: "A Problem That Urgently Needs Attention: Protecting the Natural Environment and Natural Resources"]

[Text] Human existence cannot be separated from the natural environment and human life cannot carry on without natural resources. A fine natural environment with rich resources is an important condition in assuring human existence and making life prosperous. Destroying the natural environment and resources will inevitably cause ecological imbalance and bring nature's retribution on mankind. This is an objective law which is independent of people's will.

Ours is an ancient and civilized country in the world. Its natural environment is fine; its scenic spots and historical sites are numerous; and its resources are abundant. But in the last 10-odd years, owing to destruction and interference by Lin Biao's and the "gang of four's" ultraleftist line and some other reasons, the natural environment and resources have been greatly damaged. This kind of destruction has already caused or is causing serious consequences.

First, there has been destruction of forest resources and vegetation of mountain areas, causing extensive soil erosion and disastrous flood and drought. Our province originally had considerable forest land and timber reserves, but now existing forests are mostly young, sparse and despoiled. Mature resources for logging are increasingly scarce. According to estimates they amount to only 17 million odd cubic meters while the annual logging is about 2.5 million cubic meters. At this rate, mature resources can only continue to provide production for 6 to 7 years. In some regions, the destruction of forest resources has caused serious soil erosion, decrease in precipitation and increase of floods. According to a survey in 1977, the area suffering from soil erosion in the entire province has exceeded 10,800 square km, which constitute 5 percent of the total area. The silting of rivers and reservoirs is becoming serious. There is a noticeable increase in the amount of silt in 802 rivers in the entire province. The sand bank of the Pearl River confluence where the East, West and North Rivers converge out to sea has been steadily extending at an annual rate of 60 to 100 meters. Over 850 water conservancy facilities of various sizes and about 1.38 million mu of farmland have been damaged.

Second, the destruction of aquatic resources has seriously affected fishery production and even made supplies for local consumption difficult. Our province originally had plentiful seafood products and at one time led the nation in the production of fresh water fish. As a result of excessive fishing in recent years, irrational land reclamation from the sea and construction of river dams, as well as pollution caused by the "three wastes" of industries and pesticides, the output of aquatic products has been declining over the years. Some expensive fish such as the guihua are on the verge of extinction. Present production of many fisheries has greatly decreased, some of which have become unproductive in flood seasons. The more abundant yellow croaker and hairtail are now seldom seen in the South China Sea. Annual production of prawns, formerly over 8,000 dan and widely marketed abroad, has now dropped to only 800 dan.

Third, unrestricted capture, killing and gathering have caused destruction of some valuable animal and plant resources which are facing imminent extinction. Hainan Island in the 1950's had over 20 packs of gibbons numbering over 2,000, but now there are not even 30. Although the commercially valuable hillside deer has come under protection, destruction of the natural environment has caused them to breed very slowly and now only 60 odd remain. The munjac has also been noticeably reduced. Formerly, as many as 120,000 munjac skins were annually collected and purchased on Hainan Island. In 1978 they numbered only 20,000. Moreover, the South China tiger is seldom seen. The Dinghu mountain area in Zhaoqing Prefecture is more typically a subtropical ecological region. According to observations in recent years, however, 10 animal species are already extinct or endangered. The tiger, leopard, yun leopard, zibet and masket civet have virtually disappeared. The pangolin used to be a rather common animal in our province but unrestricted capture has caused it to become scarce.

The danger is destroying the natural environment and resources is more profound than the pollution caused by the "three wastes" of industries. Their recovery and improvement are more difficult, and already some cannot be restored. Thus protection of the natural environment and resources have become an immediate problem that requires early resolution. First of all, the administration of existing nature protection areas should be strengthened. For many years the state, some provinces and cities have established a small number of nature protection areas of different ecotypes. Sound administrative organs should be further created in these areas to strengthen control, to positively develop scientific research and to carry out their intended function. Secondly, new nature protection areas should be established. There are few in our country and their size is small. They are predominantly forest ecotypes unsuitable for meeting the needs of protecting and improving the country's natural environment and therefore should be methodically expanded. Finally, survey of nature protection areas should be developed. There should be a comprehensive and scientific survey of both existing and newly planned areas to understand their specific conditions, to establish the necessary documents on resources and to recommend policies for strengthening scientific administration.

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ECOLOGICAL STUDIES CALLED BOTH PERTINENT, ESSENTIAL

Shanghai JIEFANG RIBAO in Chinese 21 Mar 80 p 4

[Article by Sheng Helin [4141 0735 2651]: "We Have Already Been Punished by Nature -- Pay Serious Attention to Ecology and its Utilization"]

[Text] Ecology is related to the development of production within the world sphere as well as to the transformation of nature and the livelihood of mankind. Whoever does not take ecology seriously or respect the natural law of ecological balance will be punished by nature. In fact, we have already been punished by nature.

Ecology is the branch of science which deals with the study of the laws of reciprocal functions between living systems and environmental systems, along with their adaptive mechanisms. It is the theoretical foundation for the development and utilization of agriculture, forestry, pasturage, fishery, environmental protection and resources of living things. In recent years, ecology has become an important study area in government departments of a majority of developed countries and in the scientific world. Out of ecology have also developed many branch studies; aside from animal ecology and botanical ecology, there are also agricultural ecology, marine ecology, evolutionary ecology, human ecology and urban ecology, etc.

In our work, if we take ecological studies lightly, lack knowledge of the objective laws of reciprocal functions between living systems and environmental systems, and rely merely on the subjective desire to work, we will consequently bring about disruption and destruction of the ecological balance in many areas as well as introduce many serious problems to the national economy.

Forests supply lumber to people--this is only a small part (about 1/5) of the function of forests. Studies by ecologists have shown that a more important function and economic benefit of forests lies in the regulation of climate, nourishment of water sources, soil conservation, environmental improvement, stabilization of bumper harvests of crops, and the supply of many different kinds of forest byproducts. If this point is not understood, excessive felling of trees often will occur. For example, wherever mountain roads are constructed, trees are cut down, resulting in bald hills covering large areas; and there is even destruction of forests to cultivate virgin land, leading to severe erosion. Owing to the destruction of forests and the loss of the capability to regulate water sources, some Zhexi residents who had long been residing in the mountains encountered difficulties even with drinking water due to the interruption of their water sources following the destruction of forests, and they had no choice but to move. Only then did we realize the consequence of destroying forests. In some places [the people], while repairing and rebuilding reservoirs, chopped down the woods upstream and in the surrounding area; this was actually tantamount to digging away the foot of the reservoir walls. Some reservoirs were clogged with large quantities of sediment carried by flowing waters, greatly reducing both the capacity of the reservoirs and years of effective service. In 1975, under the impact of typhoon No. 3 and torrential rains, the four big reservoirs in the mountainous areas of Henan yielded two different results: Banqiao Reservoir and Shimantan Reservoir areas, with decimated forests upstream, could not disperse the floodwaters quickly enough and were breached, creating enormous loss of life and property. However, the Boshan Reservoir and Dongfeng Reservoir areas, with luxuriant forests upstream, brought into full play the function of regulating water capacity and were able to come through the flood crest safely.

Let us go back to pasturelands. Green plants absorb water, carbon dioxide, and minerals from the inorganic environment; they secure solar energy through photosynthesis; and they transfer part of these to herbivorous and carnivorous animals. Withered branches, fallen leaves, and animal remains also return materials to the soil through decomposing elements (bacteria and fungi). This is a continuous process. Energy flows ceaselessly and material circulates ceaselessly. However, if large quantities of material are removed each year in the process and are not compensated for, and if the loss of equilibrium between intake and output surpasses the ability of the ecological system of the plants to adjust, the stability of the process will be disrupted. Plants as the producing party can still manage to recover quickly and continue to maintain equilibrium after being used to a certain degree as food by animals. Therefore, one of the most important subjects of ecological study is to find out the most efficient capacity of pastures for livestock grazing and to take advantage of pastures forever.

Proper utilization of animal resources is an important subject of research by animal ecologists. The number of animals produced under specific environmental conditions is always self-regulatory. After the number of animals have reached a certain level, and owing to the effect of environmental pressures, the birth rate and death rate will then achieve a balance and a state of stability. It is of course wasteful when animal resources are not utilized, but if we violate this regularity and utilize animal resources excessively, we will be mercilessly avenged [by nature]. In 1955, in order to pursue the production of valuable pelts of weasels and badgers, relevant departments inappropriately propagated methods of killing by poison. Although the production of pelts increased that year, weasels and badgers in some areas almost vanished completely after such destructive methods were employed. It was only after 10 years that their populations were restored close to their normal level. In fish production, exhaustion of resources will also occur if there is only catching and no preservation. In recent years, production levels of economically important fish such as yellow croaker, ribbon fish, and squid, etc., of big and small sizes have declined by more than half. In Shengsi, some fishermen captured yellow croaker fry and ribbon fish fry (there were about 300 to 400 fry per jin); each basketful easily weighed more than 200 jin. When the fry was processed into fish powder, the value was quite high. But such arbitrary destruction of resources produced grave consequences: In the past, the entire county caught 600,000 to 700,000 dan yearly of big and small yellow croakers. In recent years, despite an increase in staff and fishing boats, production obviously declined. Only 60,000 dan were caught the year before last, and a mere 20,000 dan were caught last year. Fish resources of the sea are not inexhaustible. We have to proceed from the reality of the amount of available resources and achieve a harmonious balance between taking and keeping; this is an extremely important issue.

That ecology is given importance by every government and by the academic world is in fact an inevitable trend of the development of science and of the times. We should also place great emphasis on ecology, this multi-branch science. We should utilize and develop this science, serve the four modernizations, and work for the benefit of the people.

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PROGRESS IN XIANG JIANG POLLUTION CONTROL

Beijing GUANGMING RIBAO in Chinese 6 Apr 80 p 1

[Unsigned article, NCNA, Changsha, 5 Apr: "Initial Progress in Resolving Problem of Pollution of the Xiang Jiang"]

[Text] The concerned authorities are now carrying out comprehensive control of the pollution which has so seriously polluted the Xiang Jiang. Of the 350 large and small pollution control projects initiated last year, 264 have already been completed and are in operation. In one year, these projects can reduce by about 100 million tons the amount of pollutants entering the Xiang Jiang, and over 400 kinds of chemical, light industrial and nonferrous metallurgical products valued at over 300 million yuan can be recovered.

The Xiang Jiang within Hunan province is 670 kilometers long and flows past such cities and towns as Lingling, Hengyang, Zhuzhou, Xiangtan and Changsha before emptying into Dongting Lake. The water quality of the Xiang Jiang directly influences the personal health and industrial and agricultural production of over 20 million people living in its proximity. Over the past few years, following the development of industrial and mining enterprises along the riverbank, waste gas, waste water and waste sediment has had an ever increasing effect on pollution of the river. A few production departments and industrial and mining enterprises place one-sided emphasis on developing production, neglecting control of the "three wastes," and making the pollution problem insoluble for a long time.

Hunan province's actual strengthening of the comprehensive pollution work on the Xiang Jiang started last year. Last February the appropriate departments formulated the "Provisional Regulations for Protection of the Xiang Jiang River System." They also established the "Xiang Jiang River System Protection Committee," and in July the scientific and technological personnel from over 30 appropriate departments formally began scientific research work on comprehensive control of Xiang Jiang pollution. They thoroughly investigated the varying degrees of pollution in each section of the Xiang Jiang branches, and together with the scientific and technical personnel from the local environmental protection departments and scientific research units, carried out monitoring, analysis, testing and investigative research of the sources of each kind of pollution, and suggested economically feasible measures for comprehensive control.

During the last half of last year, quite a few of the metallurgical, chemical, light industry and power departments which had produced comparatively serious pollution of the Xiang Jiang strengthened their work on control of the "three wastes." In the past, the Zhuzhou "May 7" Pesticide Plant released polluted water containing almost one thousand more times zinc than allowed by state regulations. The biochemical control measures which have now been instituted lower the zinc ratio within the state regulated amount. Last year the Zhuzhou Smeltery dumped over 3,600 tons of zinc-polluted water into the Xiang Jiang. This plant has now established a complete environment protection station responsibility system, which employs such measures as multiple uses for water and closed circuit cyclical use of water. These greatly reduce the ratio of zinc contained in the water. The Changsha Municipal Construction Department has instituted treatment of water polluted by livelihood and industrial use, which was formerly dumped in the Xiang Jiang, and now reuses it to irrigate farm fields and raise fish. At present, the Environmental Protection Department is requesting those key units which continue to pollute the Xiang Jiang to institute controls within a specified time, and it is applying punishments to those units which violate the "Provisional Regulations for Protection of the Xiang Jiang River System."

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CSO: 5000

RESULTS OF PROJECTS TO HANDLE 'THREE WASTES' ENCOURAGING

Tianjin TIANJIN RIBAO in Chinese 23 Mar 80 p 1

[Article by Ma Muan [7456 2606 1344] and Zhang Qingliang [1728 1987 0081]: "Sixty-seven Projects to Handle the "Three Wastes" Over the Past Several Years"]

[Text] The Tianjin Chemicals Plant values environmental protection work and has instituted management techniques to bring about quick controls. They have firmly and untiringly controlled the "three wastes," and have already obtained results.

The Tianjin Chemicals Plant originally was one of the more serious polluters. Starting in 1974, especially after the smashing of the "gang of four," this plant began to value environmental protection work and unrelentingly controlled the "three wastes." During the past few years, 67 controls have been realized, with an annual reduction of 1.33 million cubic meters of waste water, 300 million cubic meters of waste gas, and over 14,290 tons of waste sediment. There is annual recovery of 31 tons of benzene, 700 tons of chlorine, 100 tons of sanlü [0005 3048] methane, 86 tons of titanium tetrachloride, 2,400 tons of hydrochloric acid, and 211 tons of ethyl chloride, with a total value of over 1.5 million yuan. Not only has the environment been improved, the wealth of the state has also been increased.

This plant's relative success in controlling the "three wastes" is mainly because of a firm grasp of the following techniques:

1. Leadership emphasis and organizational effectiveness. This plant made environmental protection work a part of the daily agenda. A deputy plant manager and a deputy chief engineer were put in charge of this work and an environmental protection section was organized. In each shop environmental protection work was managed by a director and a technician. At the same time, control of the "three wastes" and environmental protection work were made a part of production management, regular plant-wide meetings to exchange environmental protection work experiences, study the spirit of the upper level environmental protection documents, raise the staff and worker awareness of the

importance of environmental protection work, to sum up and exchange experiences, praise the advanced, urge on the less advanced, and ensure the stage by stage implementation of environmental protection work were held.

2. The establishment of an environmental protection management system. According to the spirit of the upper level and to unify the plant's actual conditions, this plant formulated systems of regulations "Provisional Management Methods for Plant Environmental Protection," "Management Methods for Releasing Polluted Water," and "Environmental Protection Awards System," unified summations with comparisons and appraisals, and fixed a time limit for investigating progress in implementation of the systems of regulations.

3. Implemented mutual unification of expert and mass investigation and testing, strengthened management, and reduced evaporation, spilling, dripping and leaking. Because of the great amount of piping and highly corrosive nature of the chemicals, evaporation, spilling, dripping and leaking are relatively serious problems, so this plant established a special network of mass and expert investigation and testing. The plant's central testing laboratory also set up a group to test for the "three wastes,"and conduct a regular weekly examination of the polluted water release system. It also carries out unscheduled atmospheric tests, overall tests and sample tests. In those shops and workship sections with pollution or danger, analyses and tests are carried out, and the results are posted so that all workers will know how far the unit is from meeting the state-established standards for pollution and will strengthen equipment management to reduce evaporation, spilling, dripping and leaking.

4. Through short-term and long-term plans and regulations for controlling the "three wastes." The plant first clarified the sources of the pollution and then motivated the masses and sent down plans and regulations for the annual and long term control of pollution. Simultaneously, a seasonal schedule with monthly tests was set up; based on the principle of doing easy things first and harder things later, with specific emphasis first and general attention later, one by one each item was completed.

Because this plant values control of the "three wastes" and environmental protection work, results have already been obtained, the bulk of the pollution has been controlled. In some units which were polluted and dangerous, the density of the offending substances in the air and water has basically come within the state-established standards. For a multitude of reasons, however, some problems, such as mercury pollution, have not yet been solved and the nearby inhabitants complain. The plant is resolved that in 1980 it will make new contributions in creating new standards, changing its look, and advance in environmental improvement to contribute to the four modernizations.

11582
CSO: 5000

VEGETABLE FARMERS TURNING MT. DATA TO DUST BOWL

Manila PHILIPPINES DAILY EXPRESS in English 5 Apr 80 pp 1, 6

[Article by Rodolfo A. Fernandez]

[Text] Baguio City--Mt. Data, the Philippines' second highest mountain located in Benguet province, is no longer a national park but a "vegetable park."

The description is supplied by government forestry experts who warn that the majestic peak will soon be reduced to a "dust bowl" if the continuous conversion of its slopes into vegetable farms is not stopped on time.

They reported that almost three-fourths of Mt. Data's total watershed area of 3,513 hectares are already occupied by some 600 vegetable farmers whose numbers keep increasing. While the park's terrain is rough, its good soil and climate attract more lowland farmers.

Intensifying vegetable farming on Mt. Data is reflected by the farmers referring to it as their source of "green gold." Their vegetable produce supply the requirements of Metro Manila, Benguet, this city, and other points in Luzon.

High profitability of vegetable farming on the mountain is given added proof by results of a survey conducted by Rogelio C. Serrano of the Philippine Council for Agriculture and Resources Research.

He reported that a vegetable farmer with a capital of P10,000 can easily net at least P40,000 in a year.

"With their sizeable income, most of these farmers have built beautiful homes and bought freight trucks for the transporting of their produce to market," Serrano said.

The farmers triple such vegetable crops as cabbage, potato, pechay, mustard, lettuce and cauliflower a year. They also cultivate flowering and ornamental plants like the everlasting, daisy and calla lily, which command high prices in Metro Manila.

While pocketbooks of the farmers get fatter, the Mt. Data ecology and those of the surrounding areas get permanently ruined, according to the experts.

For example, Serrano found that pressure in opening up more natural pine forests in the mountain in favor of vegetable farming mounts every day.

What results is that the standing pine trees are first burned and then cut down during the hot months after which the land is prepared and planted to vegetables. Such a practice takes place every year, thus accelerating the mountain's denudation rate.

Most of the farmers expand their areas every opportunity they get, ignoring government laws and policies. The mountainsides thus remain green, but no longer planted to permanent tree crops but to vegetables.

"Denudation of the steep mountain slopes is now one of the most serious problems in Mt. Data. Vegetable farming has caused the rapid erosion and loss of fertile topsoil from the mountain," Serrano lamented.

The ongoing soil erosion in Mt. Data has contributed to the accelerated sedimentation rate in the reservoir of its watershed service area which included the Ambuklao, Binga and Chico dams, such a development resulting in the shortening of their lifespans.

Use of pesticide chemicals by the vegetable farmers is singled out by the experts as another grave problem since the toxicity seeps to the rivers and creeks causing havoc to fish and other aquatic life.--DEPTHnews

CSO: 5000

SEDIMENTATION CUTS AMBUKLAO DAM LIFE BY HALF

Manila PHILIPPINES DAILY EXPRESS in English 7 Apr 80 pp 1, 2

[Article by Feliciano H. Magno]

[Text] Sedimentation has reduced the useful lifespan of the Ambuklao dam in North Luzon from 60 to 32 years.

The dam is cited as one of many examples on how careless use of watershed forests can cut the economic life of reservoirs, hydroelectric facilities and irrigation system.

What has befallen Ambuklao is also happening to other dams in both developing and advanced countries of the world today, reported the United Nations Environment Program, International Union for Conservation of Nature and Natural Resources and the World Wildlife Fund.

The three groups are spearheading a World Conservation Strategy (WCS) launched March 6 to bring about concerted and collective international action to arrest the worsening deterioration of the world's natural resources.

In a report on state of watershed forests worldwide, the advocates of WCS said these are being "widely devastated" through clearance for agriculture, by logging and cutting for fuel, and by badly managed road building.

Results of forest watershed mismanagement are extremely expensive as has been the experience of the Philippine and Argentine governments, the report pointed out.

In Argentina's case, the government had to spend $10 million a year to dredge silt from the estuary of the River Plate to keep Buenos Aires open to international shipping.

The report pointed out that 80 percent of the 100 million tons of sediment that annually threaten to block the Buenos Aires harbor come from only four percent of the drainage basin which is the heavily overgrazed catchment area of the Bermejo River located 1,800 kilometers upstream.

Aside from silting up dams and rivers, the sedimentation caused by forest denudation also unleash destructive floods which in India alone exacts an annual damage that ranges from $140 million to $750 million, not counting the loss of human lives, the report added.

In the United States, the estimate is that about a billion cubic meters of sediment are deposited yearly in the major reservoirs of that country.

"The global costs of sediment removal, river dredging, reconstruction of irrigation systems and loss of investments in expensive structures like dams must be huge," according to the study.

It also stressed that only 10 percent of the world's population reside in mountainous areas and about 40 percent in adjacent plains and yet when watershed ecosystems are impaired or severely damaged, the suffering directly affects the 50 percent and indirectly the remaining 50 percent of the global population.

Under the forest conservation program of WCS, governments are called upon to put into action measures that would effectively protect and preserve the watersheds.

Such measures should also enhance the role played by forests on the general ecosystem of a nation. Such a function includes:

--Influencing local and regional climates, generally by making them milder and helping ensure a continual flow of clear water aside from being a source of timber and other products.

--Tropical cloud forests help increase availability of water by intercepting moisture from the clouds.

--Watershed forests protect the soil cover on site and protect downstream areas from excessive floods and other harmful fluctuations in the stream flow.

--Watersheds reduce the silt load of rivers thus preventing the clogging of dam reservoirs, irrigation systems, canals and docks, and the smothering by sediment of coral reefs.--DEPTHnews

CSO: 5000

SHORTCOMINGS IN EFFORTS TO COMBAT INDUSTRIAL POLLUTION

Tirana ZERI I POPULLIT in Albanian 26 Mar 80 p 3

[Article by Faik Toska: "The Protection of the Environment From Pollution Is a Social Problem"]

[Excerpts] One must realize that with the intensive development of industry, especially the petroleum industry, the mineral extraction and enrichment industry, and the chemical, metallurgical and construction materials industries, sources of environmental pollution are produced. Therefore, this problem should be given proper attention by all. In general, in the cement factories no steps are taken to put the electrofilters in proper operation. In the soda factory and the polyvinyl chloride factory in Vlore dangerous substances have been released into the industrial waters and into the air as a result of insufficient measures for sealing off the production processes and the failure to execute health and technical discipline rigorously. In the paper factory in Lezhe, there has been an unjustifiable delay in putting into operation equipment for purifying industrial waters before they are emitted. All these things indicate that the health organs in the districts do not always carry out investigations and take the proper measures for implementing the law. Also, this shows that the directorates of enterprises and the health organs in the districts do not monitor these problems in a systematic manner. Investigations made by the organs of the inspectorate for the protection of the environment from pollution and studies made on this subject reveal that some ministries or executive committees of the district peoples councils have not taken all the necessary measures which would be of concrete assistance in keeping the environment pure. For example, in the city of Durres, industrial waste is dumped, on occasion, in places where this is not permitted and in the city of Shijak, there is also environmental pollution.

A great effort has been expended in supplying our cities and villages with water but studies in this field reveal that there are still defects and shortcomings in the good management of the sources of the wells and the water system and in protecting them from pollution. Pollution of drinking water, even in rare cases, has serious effects on the health of the people. Therefore, the organs of the design, investing, and executing enterprises must not allow even the slightest concessions in the design and execution of projects which do not meet the health norms and regulations. The health organs should further strengthen their timely control and assistance, bringing issues before the government and party organs in the districts so that preliminary measures can be taken in time.

A short time ago, the Academy of Sciences organized a special conference on the protection of the natural environment, where measures were proposed which should be taken to improve the situation in various fields of scientific activity and production, in industry, agriculture, the health sector, etc. On the basis of a profound analysis of the problem, it was decided that more studies and concrete measures should be planned. But the progress in the execution of these tasks is slow.

Such an attitude is not at all proper. In the health sector, for example, the study work is concentrated on the evaluation of the environmental situation, beginning with the internal environment. For this purpose, laboratories equipped with the necessary apparatus have been set up in the Institute of Hygiene and in the appropriate directorates in the districts and good work has been done in training workers. The Ministry of Health and its sections in the districts have been active in organizing and constantly monitoring analyses in the work and production centers and in residential zones in order to gain a better knowledge of the effect of atmospheric pollution on the health of workers. This activity requires further expansion and constant monitoring.

The good results which have been achieved in protecting the atmosphere from pollution does not mean that those negative aspects which damage the health of individuals are no longer evident. This is why it is essential that a complex work be carried on by all people, keeping in mind that fact that the protection of the environment is a social problem.

CSO: 5000

ENVIRONMENTAL DANGER, PROTECTION OF URBAN CENTERS DESCRIBED

Warsaw WIADOMOSCI STATYSTYCZNE in Polish No 3, Mar 80 pp 5-10

[Article by Marian Grzesiak and Jolanta Kida-Kowalczyk, Department of Agriculture and the Food Industry]

[Text] In previous articles[2] the characteristics of water resources in connection with problems of pollution and water pollution control, the characteristics of the danger and air pollution control and the problems of the noxiousness of industrial and municipal wastes for the environment were presented. The results of studies and statistical analyses concerning these problems related to the territory of the entire country.

In the present article we present problems of environmental pollution and degradation by industrial activity in urban centers and the characteristics of protective actions to eliminate or limit the harmful influence of industry on the living environment in those regions.

Urban centers are, and in the very near future will be, the main communities of the country. They are defined as "a group of communities occupied by a considerable population engaged mainly in non-agricultural occupations, where under the influence of functional specialization of the individual units an intensive everyday displacement of individual and goods occurs".[2]

The results of statistical studies presented in this article relate to the delineation of urban centers by the Planning Commission under the Council of Ministers for the needs of territorial and economic planning. This concept relates to the volume and planned structure until the year 1990 and results from a generalization to the level of the basic administrative units (towns, parishes) and the delineation made in phase IV of the work of the Institute of Environmental Development on the plan for the development of urban centers. This takes into consideration the administrative division of the country dated 1 May 1975 and the most recent administrative changes, the degree of investment in the area, the existence of forest areas and the conclusions deriving from the laid-out plans for development of urban centers.[3]

The troup of 19 urban centers distinguished on the basis of those principles embraces about 18 percent of the surface area of the country and about 48 percent of the population of Poland. This means that almost every other inhabitant of Poland lives in a region in which negative effects of a large concentration of population and economic activity appear (65 percent of the fixed assets for industrial production and 65 percent of industrial workers are concentrated in urban centers).

The long-range plans for the social and economic development of the country envisage a further intensive development of urban centers. It is assumed that, among others, it will receive about two-thirds of the increase of urban population up to 1990.[4]

At the same time it is known that the degree of concentration of pollutants in a certain region has a decisive influence on the development of environmental quality, and consequently of the living and sanitary conditions of the population living in that area.

It seems essential for the needs of management, planning and control to distinguish and make up a quantified description of urban centers from the following points of view:

--the actual state of the basic elements of the environment (water, air, ground surface, soils, etc);

--the scale or degree of differentiation of environmental pollutants and disturbances in connection with the zonal concentration;

--the existing protective potential, its disposition and the types and effects of undertakings tending toward the elimination or limitation of environmental pollutants and disturbances.

The characteristics of these problems are presented on the basis of the results of GUS [Main Statistical Administration] statistical studies and analyses for 1978.

Problems of Water Management and Water Pollution and Protection by Industry in Urban Centers

The small water resources of our country (26th place in Europe), their limited availability and their irregular territorial distribution give rise to a need for careful water management, especially in regions with a large concentration of population and industry, and so above all, in urban centers.

Large industrial plants with an annual consumption of over 40,000 m^3 (over 100 m^3 per day) exert a basic influence on industrial water use in urban centers, and by the same token, on the entire water economy of the country.

In 1978 there were 1,844 such plants in urban centers that consumed 5.1 billion m^3 of water, or 47 percent of the country's industrial use of water.

The concentration of such a large number of industrial plants (about 50 percent of the country's total) in a small urban area is very unfavorable and causes a disturbance of the water balance, etc. this, in effect, leads to unfavorable and long-lasting changes in the environment.

The urban center of the Upper Silesian Industrial District (GOP), which is very exposed to these phenomena, accumulated in 1978 in its area 323 industrial plants consuming over 40,000 m^3 of water, or 17.5 percent of the number of plants located in the area of all urban centers. The following urban centers found themselves to be in a similar unfavorable situation: the urban centers of Warsaw (237 plants), Lodz (171) and Bielsko-Biala (132). In the area of these four urban centers is concentrated 47 percent of the total number of plants located in urban centers which are especially harmful to the water environment.

It should be mentioned that within theframework of individual urban centers there occurs a further concentration of plants in the central zones. For example, the concentration of industrial plants in the major zone of the GOP urban center reached 91 percent in 1978.

The influence of industrial plants on the water environment depends, among other things, on the size of the plants, their water intensiveness and the type of production. These factors directly affect the amount of water consumed by industry.

The amount of water consumed by industry in 1978, estimated to be about 5 million m^3, differs greatly in the individual urban centers. This results from differences in the economic development of individual urban centers and the availability of water reserves, and also from concentration of water-intensive industries. Table 1 shows the territorial differentiation of the amount of water used by industry.

The Szczecin urban center had the largest share (40 percent) in the use of water for industrial purposes, mainly because of the location of the Dolna Odra power plant in its area. The Krakow Warsaw and GOP urban centers, differing basically from the other centers, also had a high water consumption. In those four centers, occupying hardly 5 percent of the country's area, 37 percent of the country's consumption of water for industrial purposes was concentrated in 1978.

The degree of territorial concentration of water-intensive industries is characterized by the indicator of water consumption per km^2. It follows from the data in Table 1 that the largest industrial water consumption per km^2 was noted in the Szczecin urban center (543,000 m^3) and the Krakow center (534,000 m^3), whereas the mean for the centers was 90,000 m^3 per km^2.

Surface waters are industry's main source of water. In 1978 they covered 84 percent of the industrial water requirements in urban centers. The reserves of surface waters in the centers did not completely cover the water needs of industry. Deficiencies and the relatively unsuitable quality of surface waters have been made up by the consumption of subsurface waters. That supply source amounted to about 7 percent of the total water consumption in urban centers.

Water from municipal water supply systems also is used for industrial purposes. In 1978 the urban centers purchased from those sources 246 million m^3 of water (about 5 percent); this greatly reduces the drinking water reserves intended mainly for the needs of the population.

Table 1. Differentiation of the Use of Water for Industrial Purposes in Urban Centers in 1978

(1) Wyszczególnienie	(2) Zużycie wody		
	(3) w mln m^3	(4) w odsetkach	(5) na 1 km^2 w tys. m^3
(6) **Polska**	10785,0	x	34,5
(7) w tym aglomeracje miejskie			
(8) **Razem**	5075,3	*100,0*	90,3
(10) Białostocka	12,8	*0,3*	5,8
(11) Bielsko-bialska	158,4	*3,1*	49,4
(12) Bydgosko-toruńska	178,9	*3,5*	47,7
(13) Częstochowska	52,6	*1,0*	28,3
(14) Gdańska	119,7	*2,3*	56,5
(15) Górnośląskiego Okręgu Przemysłowego	461,8	*9,1*	102,9
(16) Krakowska	955,9	*18,8*	533,7
(17) Legnicko-głogowska	53,9	*1,1*	21,7
(18) Lubelska	25,9	*0,5*	11,2
(19) Łódzka	94,5	*1,9*	31,3
(20) Opolska	141,1	*2,8*	43,4
(21) Poznańska	40,3	*0,8*	15,4
(22) Rybnicka	64,2	*1,3*	38,7
(23) Rzeszowska	11,8	*0,2*	8,9
(24) Staropolska	46,3	*0,9*	10,0
(25) Szczecińska	2035,7	*40,1*	543,3
(26) Wałbrzyska	39,0	*0,8*	20,8
(27) Warszawska	497,4	*9,8*	82,0
(28) Wrocławska	85,1	*1,7*	22,5

(9) Źródło: dane GUS.

Key:

1. Itemization
2. Water consumption
3. in millions of m^3
4. in percentages
5. per km^2, in thousands of m^3
6. Poland
7. including urban centers
8. Total
9. Source: GUS data
10. Bialystock
11. Bielsko-Biala
12. Bydgoszcz-Torun
13. Czestochowa
14. Gdansk
15. Upper Silesia Industrial District
16. Krakow
17. Legnica
18. Lublin
19. Lodz
20. Opole
21. Poznan
22. Rybinca
23. Rzeszow
24. Staropolska
25. Szczecin
26. Walbryzych
27. Warsaw
28. Wroclaw

In some centers water drained from mines and quarries are used to make up the water requirements.

Table 2 presents the characteristics of sources of individual urban centers in 1978.

Table 2. Water Sources of Industrial Plants in 1978

(1) Wyszczególnienie	(2) Pobór wód z ujęć własnych zakładów przemysłowych				(3) Zakup wody od wodociągów komunalnych	
	(4) powierzchniowych		(5) podziemnych			
	(6) w mln m³	(7) w % zużytej wody	(6) w mln m³	(7) w % zużytej wody	(6) w mln m³	(7) w % zużytej wody
(8) **Polska**	9557,0	*88,6*	656,8	*6,1*	319,6	*3,0*
			(9) w tym aglomeracje miejskie			
(10) **Razem**	4248,7	*81,7*	351,8	*6,9*	243,7	*4,8*
Białostocka	1,9	*14,8*	6,6	*51,2*	3,6	*28,0*
Bielsko-bialska	141,9	*89,6*	5,2	*3,3*	15,7	*9,9*
Bydgosko-toruńska	143,5	*80,2*	25,6	*14,3*	9,8	*5,5*
Częstochowska	34,6	*65,8*	12,6	*23,9*	3,7	*7,0*
Gdańska	80,1	*66,9*	29,9	*25,0*	8,1	*6,8*
Górnośląskiego Okręgu Przemysłowego	154,2	*33,4*	39,5	*8,6*	85,1	*18,4*
Krakowska	931,5	*97,5*	11,6	*1,2*	12,3	*1,3*
Legnicko-głogowska	31,7	*58,9*	10,0	*18,7*	3,1	*5,7*
Lubelska	3,4	*13,1*	19,4	*75,2*	2,9	*11,2*
Łódzka	3,6	*3,8*	51,8	*54,9*	31,6	*33,5*
Opolska	103,0	*73,0*	28,3	*20,0*	2,4	*1,7*
Poznańska	20,4	*50,6*	7,4	*18,3*	10,7	*26,5*
Rybnicka	28,7	*44,7*	9,6	*14,9*	12,2	*18,9*
Rzeszowska	5,5	*46,9*	2,1	*17,5*	4,0	*33,8*
Staropolska	26,4	*57,1*	13,9	*30,0*	8,0	*17,1*
Szczecińska	2004,5	*98,5*	23,7	*1,2*	4,9	*0,2*
Wałbrzyska	15,7	*40,2*	3,3	*8,3*	4,5	*11,6*
Warszawska	448,0	*90,1*	41,2	*8,3*	17,2	*3,5*
Wrocławska	70,1	*82,3*	10,1	*11,9*	5,9	*6,9*

(11) Źródło: dane GUS.

Key:

1.	Itemization	6.	in millions of m^3
2.	water consumption from intakes of industrial plants	7.	as % of water consumption
3.	Water purchases from water-works	8.	Poland
4.	surface waters	9.	including urban centers
5.	subsurface waters	10.	Total
		11.	Source: GUS data

In the zonal structure of the urban center a high degree of concentration of consumption and thus of water input in the central zones (major and urbanized) appeared in 1978, as is illustrated by the data in Table 3.

The total input and consumption of water by industry have a direct connection with the quantity of waste waters discharged. In 1978 industrial plants located in the area of the urban centers discharged about 3 billion m^3 of waste waters, or 47 percent of the country's total industrial waste waters. Surface waters received most of those waters (91 percent). The remaining waste waters from the urban centers were discharged into the municipal sewage system. The quantity of waste waters discharged directly into surface waters from industrial plants within urban centers was 4.5 billion m^3 in 1978. That quantity included 3 billion m^3 of cooling water usually considered pure water. This is heated water, however, and when it is discharged in large quantities into low-flow surface water in relation to the standing water causes thermal pollution in the receiving bodies of water; this harms the ecology of the water and biological life.

Treatment. Hardly 55 percent of industrial wastes requiring treatment was to various degrees treated, including the use of biological methods, i.e., meeting only 6.3 percent of the requirements of the water environment. The remaining wastes (0.7 billion m^3) were discharged into the surface waters without any treatment. This disadvantageous situation affecting the purity of surface waters of the entire country was revealed with particular acuteness in the Krakow, Warsaw and GOP urban centers, in which 81 percent of the total amount of untreated waste waters discharged from the territory of all the urban centers were concentrated.

Table 4 contains more detailed information about the amount of industrial waste waters discharged (treated and untreated) by individual urban centers in 1978.

Industrial Pollution and Protection of the Atmosphere in Urban Centers

Inseparably connected with the existence and development of urban centers is the problem of air pollution.

The main sources of air pollution over the area of urban centers are industrial plants and heating installations (electric power and heat generating plants and boilers). Six hundred of the 931 plants especially harmful to the air are concentrated in urban centers. Those plants discharged 1.5 million tons of dust and 3.4 million tons of gases into the atmosphere, or 62 and 76 percent respectively of the total emission of air pollutants by industry.

The emission of dust and gas pollutants connected with industrial activity in urban centers greatly changes the parameters of the atmospheric environment. They include the intensification of the occurrence of mist in urban industrial centers; this is 2-3 times greater than that in unpolluted regions with similar weather conditions. In windless weather, mist in combination with pollutants may lead to smog, which is the most threatening of the phenomena accompanied by the occurrence of pollutants.

Table 3. Water Consumption and Input by Industrial Plants by Zones of Urban Centers in 1978

(1) Wyszczególnienie	(2) Zużycie wody		(3) Pobór wód z ujęć własnych zakładów przemysłowych				(4) Zakup wody z wodociągów komunalnych na cele produkcyjne	
			(5) podziemnych		(6) powierzchniowych			
	7 w mln m³	8 w odsetkach	7 w mln m³	8 w odsetkach	7 w mln m³	8 w odsetkach	7 w mln m³	8 w odsetkach
(9) Ogółem	5075,3	*100,0*	351,8	*100,0*	4248,7	*100,0*	245,7	*100,0*
(10) Strefa: węzłowa (11)	2825,7	*55,7*	279,9	*79,6*	2109,2	*49,6*	234,4	*95,4*
zurbanizowana (12)	2146,0	*42,3*	43,8	*12,4*	2060,8	*48,5*	10,2	*4,1*
urbanizująca się (13)	95,1	*1,9*	24,0	*6,8*	74,4	*1,8*	0,7	*0,3*
tereny otwarte (14)	8,5	*0,1*	4,1	*1,2*	4,3	*0,1*	0,4	*0,2*

(15) Źródło: dane GUS.

Key:

1.	Itemization	7.	in millions of m^3
2.	Water consumption	8.	in percentages
3.	Water input from industrial plant intakes	9.	Total
		10.	Zone:
4.	Water purchases from municipal water-works for productive purposes	11.	major
		12.	urbanized
		13.	semi-urbanized
5.	subsurface waters	14.	open land
6.	surface waters	15.	Source: GUS data

Among the gaseous pollutants accompanying the industrial process that deserve attention are: emissions of fly ash, dust from cement production and metallurgical dusts. The most prevalent gaseous emissions are sulfur dioxide and the product of incomplete combustion, carbon monoxide.

Table 5 presents the structure of the emission of the mentioned types of dust and gaseous pollutants in indivdual urban centers in comparison with the data for the entire country in 1978.

Very large indicators of air pollution (of both dust and gases) were exhibited by the very developed GOP center. That center occupies a small area--1.4 percent of the total area of the country, but its emission of dust pollutants in 1978 was 23 percent of the country's dust emissions, while the analogous indicator for gases was 25 percent. Considerable quantities of pollutant emissions also fell on the Krakow, Legnica-Glogow and Opole Centers.

It should be noted that industrial plants and heating installations concentrated in the major zones can significantly influence the quantity of pollutants emitted in the urban centers. Because of the small area of such zones and the large concentration of the population this is a very unfavorable phenomenon which increases the harmfulness of the effect of emitted pollutants. The data contained in Table 6 depict this in greater detail.

Table 4. Characteristics of Industrial Waste Waters Discharged from Areas of Urban Centers in 1978

(1) Wyszczególnienie	(2) Ścieki odprowadzane		(3) Ścieki odprowadzane bezpośrednio do wód powierzchniowych — wymagające oczyszczania				
			(6) oczyszczane				(7) nie oczyszczane
				(9) metodą			
	(4) ogółem	(5) w tym bezpośrednio do wód powierzchniowych	(8) razem	(10) mechaniczną	(11) chemiczną	(12) biologiczną	
	w milionach m³						
(13) Polska	10675,9	9991,4	1659,4	1173,3	286,3	199,8	822,0
(14) w tym aglomeracje miejskie							
(15) Razem	4970,3	4536,9	865,9	651,2	115,0	99,7	710,7
Białostocka	10,5	5,2	4,0	1,7	1,6	0,7	1,1
Bielsko-bialska	160,6	136,6	56,5	40,1	11,9	4,5	9,5
Bydgosko-toruńska	165,4	138,3	46,7	39,8	5,0	1,9	43,3
Częstochowska	39,1	29,6	12,4	4,2	7,8	0,4	12,2
Gdańska	110,9	92,9	18,3	12,3	3,5	2,5	2,0
Górnośląskiego Okręgu Przemysłowego	568,7	499,5	410,9	384,8	13,2	12,9	70,5
Krakowska	923,1	898,2	1,3	0,4	0,1	0,8	279,0
Legnicko-głogowska	29,4	22,0	15,9	6,5	5,8	3,6	6,1
Lubelska	21,6	9,2	6,6	4,1	1,6	0,9	1,8
Łódzka	80,3	21,7	12,9	1,0	11,0	0,9	8,4
Opolska	98,8	86,1	82,4	29,5	0,2	52,7	3,5
Poznańska	35,2	17,0	11,4	4,5	5,1	1,8	2,6
Rybnicka	45,7	39,0	29,8	24,9	1,0	3,9	8,6
Rzeszowska	10,8	6,8	2,0	1,1	0,6	0,3	1,2
Staropolska	46,2	32,4	23,2	21,3	0,7	1,2	9,1
Szczecińska	2026,2	2005,6	63,4	18,2	42,5	2,7	10,3
Wałbrzyska	37,6	25,5	14,1	12,1	1,7	0,3	11,4
Warszawska	491,8	420,4	24,8	19,1	0,3	5,4	225,4
Wrocławska	68,4	30,9	29,3	25,6	1,4	2,3	4,7

(16) Źródło: dane GUS.

Key:

1.	Itemization	8.	by gas
2.	Discharged wastes	9.	method
3.	Wastes discharged directly into surface waters, requiring treatment	10.	mechanical
4.	Total	11.	chemical
5.	including directly into surface waters	12.	biological
6.	purified	13.	Poland
7.	unpurified	14.	including urban centers
		15.	Total
		16.	Source: GUS data

Table 5. Emission of Pollutants from Industrial Plants and Heating Installations in Urban Centers in 1978

(1) Wyszczególnienie	(2) Emisja pyłów				(3) Emisja gazów		
	(4) razem	(5) w tym			(4) razem	(5) w tym	
		(6) popiół lotny	(7) pyły z cementowni	(8) pyły metalurgiczne		(9) dwutlenek siarki	(10) tlenek węgla
	(11) w tysiącach ton						
(12) **Polska**	2440,0	1606,6	432,1	195,7	4477,4	2521,4	1570,5
(13) w tym aglomeracje miejskie							
(14) **Razem**	1506,5	972,6	227,8	172,9	3409,3	1690,5	1489,5
Białostocka	9,8	9,7	—	—	9,1	9,0	—
Bielsko-bialska	114,2	90,4	12,0	1,9	54,4	25,3	15,3
Bydgosko-toruńska	36,1	33,5	—	0,3	58,3	43,7	1,3
Częstochowska	40,0	10,4	13,7	9,6	90,3	17,5	69,0
Gdańska	17,7	13,5	2,1	0,3	52,6	43,9	0,4
Górnośląskiego Okręgu Przemysłowego	556,9	320,3	107,5	81,3	1125,7	735,2	352,8
Krakowska	153,2	92,4	3,4	37,0	829,6	156,3	625,7
Legnicko-głogowska	30,8	8,4	—	21,9	465,1	112,9	325,0
Lubelska	41,7	35,6	—	4,7	66,0	54,8	2,8
Łódzka	0,4	0,4	—		0,5	0,5	—
Opolska	135,5	64,4	62,7	1,5	129,0	75,4	25,3
Poznańska	80,3	70,6	—	1,9	165,8	124,2	35,7
Rybnicka	4,6	3,3	—	0,0	6,2	4,9	0,5
Rzeszowska	4,3	3,5	—	0,7	4,4	3,6	0,2
Staropolska	43,5	4,2	25,3	4,3	21,1	10,7	9,3
Szczecińska	46,5	43,0	0,6	0,0	175,3	144,5	14,9
Wałbrzyska	44,8	35,8	—	0,2	29,9	21,7	1,9
Warszawska	92,4	86,3	0,2	4,3	81,0	70,0	8,4
Wrocławska	53,8	46,9	0,3	3,0	45,0	36,4	1,0

(15) Źródło: dane GUS.

Key:

1. Itemization
2. Emission of dusts
3. Emission of gases
4. total
5. including
6. fly ash
7. dust from cement production
8. metallurgical dusts
9. sulfur dioxide
10. carbon monoxide
11. in thousands of tons
12. Poland
13. including urban centers
14. Total
15. Source: GUS data

In individual sources of emissions over a period of time, substantial changes can occur in both the quantity and the type of emitted dust and gases. Investigation of those changes, for example, in two successive reporting periods makes it possible to determine whether the given sources of pollution reduce or increase their harmful effect on the areas of urban centers, for example. The quantity and directions of change of industrial dust and gas emissions in individual urban centers in 1978 compared to 1977 are illustrated by the data of Table 7.

Table 6. Harmfulness of Emissions of Pollutants by Zones of Urban Centers in 1978

(1) Wyszczególnienie	(2) Liczba mieszkańców*	(3) Powierzchnia*	(4) Zakłady uciążliwe dla czystości powietrza atmosferycznego	(5) Emisja zanieczyszczeń (6) pyłowych	(7) gazowych
	(8) w % ogółem				
(9) Ogółem	100,0	100,0	100,0	100,0	100,0
(10) Strefa: węzłowa (11)	73,1	15,6	86,2	82,1	80,0
(12) zurbanizowana	11,2	19,4	10,5	11,9	9,1
(13) urbanizująca się	7,1	23,2	2,7	5,7	10,9
(14) tereny otwarte	8,6	41,8	0,6	0,3	0,0

(15) * Stan w dniu 31 XII 1975 r.
(16) Źródło: dane GUS.

Key:

1. Itemization
2. Number of compounds
3. Surface
4. Plants harmful to the purity of the air
5. Emission of pollutants
6. dust
7. gaseous
8. as % of total
9. Total
10. Zone
11. major
12. urbanized
13. semi-urbanized
14. open land
15. a - Status as of 31 Dec 75
16. Source: GUS data

Table 7. Changes of Industrial Emissions of Air Pollutants in Urban Centers in 1978

1. Itemization
2. Balance of changes of industrial emissions of air pollutants (+ = increase, - = decrease in comparison with (1977)
3. dust emissions
4. gas emissions
5. in thousands of tons
6. Poland
7. including urban centers
8. Total
9. Zone
10. major
11. urbanized
12. semi-urbanized
13. open land
14. Source: GUS data

(1) Wyszczególnienie	(2) Saldo zmian emisji przemysłowych zanieczyszczeń powietrza („+" wzrost, „—" zmniejszenie w porównaniu z 1977 r.) (3) pyłowych	(4) gazowych
	(5) w tys. ton/rok	
(6) Polska	+137,9	+216,6
(7) w tym aglomeracje miejskie		
(8) Razem	+29,2	+151,3
(9) strefa: węzłowa (10)	+29,1	+146,1
zurbanizowana (11)	−1,8	−38,5
urbanizująca się (12)	+1,9	+43,7
tereny otwarte (13)	0,0	0,0
Białostocka	+4,4	+0,9
Bielsko-bialska	−1,6	−40,3
Bydgosko-toruńska	+2,1	+2,1
Częstochowska	−6,3	+9,5
Gdańska	+1,8	+7,4
Górnośląskiego Okręgu Przemysłowego	−10,1	+115,1
Krakowska	+3,0	−17,6
Legnicko-głogowska	+5,5	+37,0
Lubelska	−0,6	−1,8
Łódzka	0,0	0,0
Opolska	−2,2	+10,6
Poznańska	+7,0	+14,1
Rybnicka	+0,2	−0,4
Rzeszowska	+0,2	−0,2
Staropolska	−2,9	+1,0
Szczecińska	+4,9	+5,8
Wałbrzyska	+1,1	+1,3
Warszawska	+15,8	+6,2
Wrocławska	+6,9	+0,6

(14) Źródło: dane GUS.

It follows from the cited data that in the area of urban centers during 1978 a considerable increase of the total emissions of both gaseous pollutants (by 151,000 tons) and dust pollutants (by 29,000 tons) was noted in the statistically studied sources of industrial pollution. The main causes of increased emissions of pollutants were the putting of new production flowlines into operation, intensification of the production in existing plants, the use of high-sulfur fuels, and also the improper operation and failures of dust collector equipment. This condition manifests itself, above all, in the Warsaw urban center, in which a very large increase of dust emissions occurred, and in the GOP urban center, where there was a very large increase of gaseous pollutants.

The balance of changes of pollutant emission is greatly affected by purification equipment installed at the sources of emissions that retains dust and gaseous pollutants emitted into the atmosphere.

The quantity of dust pollutants retained in the dust collector equipment of industrial plants located in the area of urban centers in 1978 was over 14 million tons, while the analogous quantity of gases was hardly 0.5 million tons. To what degree the retained dusts and gases reduced the generated charge of the pollutants in individual zones of the urban centers is illustrated by the indicator of pollution reduction, expressed by the percentage ratio of the number of pollutants retained in purification equipment to the quantity of pollutants produced in the year 1978 (Table 8).

In the light of these data, attention is drawn by the small degree of reduction of gaseous pollutants (13 percent). This phenomenon, above all, is reflected by a lack of economic methods of reducing sulfur dioxide, which constitutes a considerable portion of the total gas emission, and by the inadequate equipment of plants with devices for reducing the remaining types of gaseous pollutants. Whereas in the area of urban centers, 85 percent of the plants polluting the air was equipped with devices for reducing dust pollution, and only 9 percent of the plants had similar devices for the reduction of gases.

Industrial Wastes Harmful to the Environment of Urban Centers

Industrial activity is the largest and, at the same time, the most harmful source of wastes. In Poland, among industrial plants producing wastes, those producing over 5,000 tons of wastes per year have a decisive influence on the extent of danger.

In 1978 there were 336 such plants in the area of urban centers, or about 60 percent of all such plants in Poland. Those plants produced 135 million tons of wastes in 1978. The GOP center had the largest number of industrial plants producing noxious wastes (116). There was an extremely opposite, favorable situation in the Rzeszow center, in the area of which only one plant produced noxious wastes in a small quantity. Table 9 presents information about the share of urban centers in the country's total volume of wastes accumulated and produced by industrial plants in 1978.

Table 8. Effects of the Operation of Equipment to Reduce Pollutants by Zones of Urban Centers in 1978

(1) Wyszczególnienie	(2) Zakłady uznane za uciążliwe dla czystości powietrza atmosferycznego			(3) Zanieczyszczenia zatrzymane w urządzeniach oczyszczających			
	(4) ogółem	(5) w tym posiadające urządzenia do redukcji zanieczyszczeń		(6) pyłowe		(7) gazowe	
		(8) pyłowych	(9) gazowych	(10) w tys. ton/rok	(11) w % wytworzonych pyłów	(10) w tys. ton/rok	(11) w % wytworzonych pyłów
(12) **Polska**	931	798	89	25835,0	*91,4*	699,1	*13,5*
(13) w tym aglomeracje miejskie							
(14) **Razem**	600	511	53	14267,3	*90,4*	510,3	*13,0*
(15) Strefa: węzłowa (16)	517	437	48	10400,0	*89,4*	312,8	*10,3*
zurbanizowana (17)	63	55	1	3524,6	*95,2*	2,1	*0,7*
urbanizująca się (18)	16	15	4	321,4	*78,9*	195,4	*34,5*
tereny otwarte (19)	4	4	—	21,3	*80,1*	—	×

(20) Źródło: dane GUS.

Key:

1. Itemization
2. Plants considered harmful to the purity of the air
3. Pollutants retained in purification equipment
4. total
5. including those equipped with pollution reduction devices
6. dust
7. gas
8. dust
9. gas
10. in thousands of tons per year
11. as % of dust produced
12. Poland
13. including urban centers
14. Total
15. Zone
16. major
17. urbanized
18. semi-urbanized
19. open lands
20. Source: GUS data

Table 9. Sources for the Formation and Quantities of Industrial Wastes in Urban Centers in 1978

(1) Wyszczególnienie	(2) Zakłady wytwarzające powyżej 5 tys. ton odpadów		(3) Odpady wytworzone		(4) Odpady nagromadzone na terenach zakładów przemysłowych (stan na koniec roku)	
	(5) w liczbach bezwzględnych	(6) w odsetkach	(7) w mln ton	(8) w odsetkach	(9) w mln zł	(10) w odsetkach
(11) Polska	563	*100,0*	161,4	*100,0*	822,1	*100,0*
(12) w tym aglomeracje miejskie	336	*59,7*	135,3	*83,8*	616,6	*75,0*

(13) Źródło: dane Ministerstwa Administracji, Gospodarki Terenowej i Ochrony Środowiska.

1. Itemization
2. Plants producing over 5,000 tons of wastes
3. Wastes formed
4. Wastes accumulated in areas of industrial plants (as of end of the year)
5. in absolute numbers
6. in percentages
7. in millions of tons
8. in percentages
9. in millions of zlotys
10. in percentages
11. Poland
12. including urban centers
13. Source: data of the Ministry of Administration, Local Economy and Environmental Protection

Among the 336 industrial plants located in the area of urban centers, each of which produced at least 5,000 tons of wastes per year, 204 plants indicated the possession of wastes accumulated on their own dumping grounds and sludge ponds.

The stored wastes uselessly occupy considerable space, a shortage of which is keenly felt, particularly in urban centers.

Dumping grounds and waste storage make rational use of construction areas difficult, pollute the ground waters, cause secondary pollution of the air, and reduce the area of crop and forest land. On a national scale about 8,000 hectares of land were withdrawn from farming in 1978 for the storage of industrial wastes, over 5,000 hectares of which were taken by urban centers.

It should be added that within the limits of the urban centers a further unfavorable concentration of areas occupied for storage of wastes occurs in the central urbanized and major zones. The degree of concentration of that phenomenon in those zones extends to above 90 percent.

The quantity of produced and accumulated industrial wastes and the rendering of them harmless in individual centers are very different, depending on the degree of industrialization of the urban center and the kinds of industries situated on its area. Table 10 illustrates this.

Especially unfavorable is the situation in this sphere of threat to the environment related to the GOP center, in the area of which was concentrated 28.5 percent of the country's industrial wastes accumulated in the environment up to the end of 1978. Moreover, a considerable load of industrial wastes was characterized by the Legnica-Glogow, Rybnik, Krakow and Walbrzych centers. Altogehter those five centers contained about 66 percent of the industrial wastes accumulated in the storage areas of the entire country.

There are two basic methods of reducing the noxiousness of industrial wastes. One is based on the economic utilization of wastes, and the other, on rendering them harmless by subjecting them to appropriate technological measures based on chemical neutralization, combustion, composting, etc.

Of the industrial wastes generated in urban centers in 1978, 66 percent were utilized economically, while only 42,000 tons were rendered harmless, i.e., a trace quantity in the bulk of wastes generated. The remaining wastes, amounting to 46 million tons, were stored on dumping grounds and sludge ponds, thus increasing the load of accumulated industrial wastes in the environment of the centers to 617 million tons, or 75 percent of the total for the country.

The noxiousness of wastes generated in 1978 was effectively reduced in the Rybnik urban center, in which over 92 percent of the wastes were utilized economically. A large degree of limitation of the noxiousness of wastes generated in 1978 was also characterized by the Bielsko-Biala and GOP centers.

Table 10. Industrial Wastes Accumulated and Produced in the area of urban centers in 1978

Key:

1. Itemization
2. Wastes accumulated in areas of industrial plants (as of end of the year)
3. Wastes produced
4. total
5. economically managed
6. rendered harmless
7. stored
8. in millions of tons
9. in percentages
10. in millions of tons
11. in percentage of total
12. Poland
13. including urban centers
14. Total
15. Source: data of the Ministry of Administration, Local Economy and Environmental Protection

(1) Wyszczególnienie	(2) Odpady nagromadzone na terenach zakładów przemysłowych (stan na koniec roku)		(3) Odpady wytworzone			
			(4) ogółem	(5) wykorzystane gospodarczo	(6) unieszkodliwione	(7) składowane
	(8) w mln ton	(9) w odsetkach	(10) w mln ton	(11) w % ogółem		
(12) Polska	822,1	100,0	161,4	58,5	0,1	41,4
(13) w tym aglomeracje miejskie						
(14) Razem	616,6	75,0	135,3	66.1	·0,0	33,9
Białostocka	0,2	0,0	0,2	39,7	—	60,3
Bielsko-bialska	18,7	2,3	3,0	85,0	0,4	14,6
Bydgosko-toruńska	0.9	0,1	0,7	33,0	0,1	66,9
Częstochowska	1,9	0,2	1,0	82,3	0,1	17.6
Gdańska	6,9	0,8	0,9	4,3	—	95,7
Górnośląskiego Okręgu Przemysłowego	234,5	28,5	56,1	83,2	0,0	16,8
Krakowska	50,5	6,1	7,0	46,4	0,0	53,6
Legnicko-głogowska	112,0	13,6	20,1	1,3	—	98,7
Lubelska	0.9	0,1	0,4	29,8	0,2	70,0
Łódzka	0,5	0,1	0,6	74,7	—	25,3
Opolska	13,7	1,7	1,1	20,4	0,1	79,5
Poznańska	0,2	0,0	0,6	71,5	1,2	27,3
Rybnicka	91.6	11,2	31,2	92,2	—	7,8
Rzeszowska	0,0	0,0	0,1	68,4	—	31,6
Staropolska	13,8	1,7	1,2	34,2	0,3	65,5
Szczecińska	15,6	1,9	2,8	12,2	—	87,8
Wałbrzyska	48,4	5,9	6,4	64,3	0,0	35,7
Warszawska	3,2	0,4	1,1	45,1	0,2	54,7
Wrocławska	3,1	0,4	0,8	11,6	0,7	87,7

(15) Źródło: dane Ministerstwa Administracji, Gospodarki Terenowej i Ochrony Środowiska.

In an exceptionally unfavorable situation in that respect was the Legnica-Glogow urban center, in which only 1 percent of the generated wastes was economically utilized, while the remaining 99 percent of the wastes (connected mainly with copper mining) was stored. The Gdansk, Szczecin and Wroclaw urban centers also had high indicators of wastes storage.

The statistical characteristics presented in the article embraces only one aspect of the phenomena and processes threatening the environment in the areas of urban centers, that is, the effects of industrial activity. In reality, the level of pollution and degradation of the environment as a result of industrial activity is elevated by the effects accompanying the process of urbanization, that is, water consumption for household and municipal purposes, municipal sewage and wastes, pollution of the air by the discharges of motor-vehicles, blast furnaces, transportation communications, etc. In that area there is a need for further expansion and intensification of statistical studies for the purpose of possibly comprehensive determination of the scale of environmental danger in areas with high concentrations of population and industry.

FOOTNOTES

1. Grzesiak, M. "Environmental Danger and Protection in Poland." WIADOMOSCI STATYSTYCZNE, No 11, 12, 1979, No 2, 1980.

2. Cf. "Planowanie aglomeracji miejskich w Polsce--raport o zalozeniach rozwoju" (Planning Urban Centers in Poland--Report on the Principles of Development). Collection of Articles. Institute of Environmental Development, Warsaw, 1974.

3. A very detailed methodical clarification of the principles of delimitation of urban centers together with a list of towns and parishes occurring in the composition of individual urban centers is contained in the part "Aglomeracje miejskie," Moscow, 1976, prepared by the GUS from the series "Informacje-Materialy Statystyczne."

4. Cf. Jedraszko, A., and Goljaszewska, B., "Urban centers in the Territorial Division of the Country." Czlowiek i Srodowisko" (Man and the Environment), Vol 1, No 1. Institute of Environmental Development, Warsaw, 1977.

2174
CSO: 5000

CONTAMINATION OF OAXACA RIVERS REPORTED

Mexico City EXCELSIOR in Spanish 5 Mar 80 p 28-A

[Article by Jose Coronado P., EXCELSIOR correspondent]

[Text] Tuxtepec, Oaxaca, 4 Mar--Millions of fish have died and it is feared that there will soon be an epidemic among the 50,000 inhabitants of several towns as a result of the contamination caused by the chemical wastes which the sugar mills, paper factories and the enterprise Celulosa Mexicana discharge into the rivers in the area.

Fausto Perez Carrera, mayor of Cosolapa, and Jose Luis Vazquez, deputy, made the above charge and singled out as the most contaminated rivers El Cinco, Guadalupe, Cosolapa, Barranca Seca and other tributaries of the Papaloapan, whose waters flow to the Miguel Aleman dam.

The inhabitants who are in danger of an epidemic because of the presence of millions of mosquitoes are those of the towns of Tezonapa, Cosolapa and Acatlan de Perez Figueroa, who in addition, do not have drinking water.

In addition to the enterprise Celulosa Mexicana, they added, the sugar mills La Margarita, Constancia Motzorongo and El Refugio discharge their chemical wastes into the rivers.

The municipal president of Cosolapa said that the federal government should force the managers of the sugar mills and of the paper factories--among them Tres Valles, San Cristobal, San Gabriel and Lopez Mateos--as well as Celulosa Mexicana, to build septic pits and dry wells for their chemical wastes.

Deputy Vazquez Montane indicated that the Oaxacan legislature will hold accountable the industries which have damaged the flora and fauna in the above mentioned rivers.

9204
CSO: 3000

STRATEGY TO STOP EXTINCTION OF BIRDS PROPOSED

Amman AL-DUSTUR in Arabic 2 Apr 80 p 5

[Article by Fawz al-Din al-Basumi: "We Need Laws and Actions To Stop the Extinction of Birds; 25,000 Persons Carry Hunting Rifles and Hunt Without Licenses"]

[Text] As the road extends before your eyes while you are traveling, you feel that you are on your way to a beautiful and entertaining trip. The road is well paved. The atmosphere is humid inspite of the fact that we are still in the last days of winter. The sun shines inspite of the cloudy skies. You ask how long the trip will take, and you are told that the destination is not too far away. But why worry about distance, you are asked, when you are on an entertaining trip to al-Azraq and to the Islamic palaces in the desert. The road is so flat that you can observe the dust camofleging the coming cars in the midst of the desert.

Al-Azraq is a very rich area filled with beautiful things. It is rare for water and vegetation to coexist with the burning sand of the desert, but al-Azraq has all these elements. The area is a beautiful oasis and looks like a heavenly painting for those who seek natural beauty.

Hunting Is a Beautiful Hobby

On the way to al-Azraq, someone told me that real enjoyment of the trip is not in looking at the scenery, sitting at the shore of the small lake, or watching the geese, the ducks and the rest of the migrating birds.

Enjoyment is in hunting! A lot of people agree. In al-Azraq, you find such a variety of birds and animals to hunt, that you wish you will never have to leave the place.

Al-Azraq, which was a vacation area and a winter resort in the past, is now being promoted as a tourist area by the Jordanian Ministry of Tourism and the Royal Society for the Protection of Nature. As a result of this, there is now a national recreational park at al-Azraq and a sanctuary at al-Shawmary which are frequented by thousands of visitors every month.

Last Friday, there were many vactioners there. Hundreds of cars with people from Jordan and Saudi Arabia came to al-Azraq to spend a whole day or part of a day. During your travel between the northern and the southern side of al-Azraq you spontaneously notice the beauty of the countryside which needs some refinement. Some of the roads are still unpaved, and the water of the lakes needs greater care, since we have decided to make this area a beautiful tourist attraction.

Interest in al-Azraq Is a Fact But...

In al-Azraq, you are told that interest in the town is a fact, and that some officials have visited the town, on the occasion of the interational day of environmental protection, in order to study ways of improving its conditions.

Environmental protection does not strictly mean observation of cleanliness as much as it means protection of nature from pollution and preservation of animal wealth. Al-Azraq is a sanctuary for migrating birds from North Africa, the Soviet Union and the farthest parts of Asia. Some of these birds travel distances for months in order to spend some time in al-Azraq before resuming their migration.

In the past, people used to hunt these birds to the point where some of them became nearly extinct.

Prohibition of Hunting to Protect the Wealth

In order to protect the environment and this animal wealth, it has been decided to prohibit hunting in all districts for a period of five years. This period is considered adequate for this wealth to multiply, according to the strategy of the Royal Society for the Protection of Nature.

As some hunters told me, they abided by the prohibitive rules in order to protect the birds from extinction and give the society the opportunity to fully perform its duties.

A Problem Facing [Licensed] Hunters

But there is a problem in that some people are still hunting. This divides hunters into two groups:

The first group is comprised of licensed hunters who have acquired hunting licenses from the society for a yearly fee. This group, according to one hunter, used to hunt with awareness and discipline and according to the seasons designated by the society. The number of hunters in this group does not exceed 800. They are all members of the Royal Society for the Protection of Nature, and they have always enjoyed hunting as a hobby and a sport.

They Hunt Without Licenses

The second group includes people who own hunting rifles for protection. They are not licensed by the society, and they are not known as hunters, inspite of the fact that they use their rifles for hunting during all seasons. This group includes approximately 25,000 people who carry rifles in every spot of the kingdom. This group is continuously increasing, since any person can purchase a hunting gun from a gun merchant.

This group hunts all year round, even during the breeding season. This led to the extinction of birds and animals in several areas, inspite of the efforts of the society's inspectors to arrest the violators and to prevent them from hunting.

Due to the fact that the inspectors are few and the allocations for surveillance inadequate, their task is impossible because the area is vast and remote.

Thus, inspite of the fact that some areas have been closed to hunters, we find that animals and birds are not multiplying, due to the large numbers of hunters who do not abide by the prohibition.

Recommendation for the Protection of This Wealth

The logical question is: How can adequate protection be secured, and how can this hobby and this admired sport of hunting be organized?

Concerned hunters say that a new strategy is required with the following aims:

1. Carry out a comprehensive survey of all provinces, and register the names and addresses of all those who own hunting rifles. This can be done by the government agencies concerned.

2. Require merchants to register the names and addresses of those who purchase hunting rifles and to supply the societywith these names.

3. Require all those who own rifles to join the Royal Society for the Protection of Nature for a yearly fee paid to the society. They would be issued a hunting license. This would control hunters and hunting, and it would make all abide by the rules.

4. Require anyone who wishes to own a rifle, regardless of its caliber, to join the society and to acquire a license.

5. Use the money collected from the licensing of new hunters by the society to increase the number of inspectors 10-fold, to purchase the vehicles necessary for inspection work, to track the violators and to intensify the campaign for public awareness through the radio, television and the press.

6. Divide the kingdom into regions and assign an inspector and a deputy inspector for each region.

7. Seek the voluntary help of licensed hunters in reinforcing hunting rules.

In addition to all this, we hope that the society will call all licensed hunters to a meeting to study the situation and to organize hunting according to modern standards, as is done in a number of developed countries, so as to preserve the animal and bird wealth of our country.

And then...

If you live in Jordan, and you look for birds, you can hardly find any as you used to in the past. You can probably find some rare animals in al-Shawmary sanctuary which is an area frequented by hundreds of visitors from the different cities of the kingdom. You wish that birds would come back to al-Azraq and other parts of the kingdom and increase by breeding. This will not occur without protection of this wealth. If the decision which prohibits hunting is in favor of this wealth and of this country, it is our duty to organize protection of this wealth and by organizing the hobby of hunting which is fancied by a large number of people in our country. Will this hope be realized?

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UNITED ARAB EMIRATES

MARINE POLLUTION THREATENS FISHING INDUSTRY

Abu Dhabi EMIRATES NEWS in English 9 Apr 80 p 3

[Article by Abdul Razak Ismael]

[Text]

Sharjah, April 8 (Al Khaleej): Pollution is one of the major side effects of the great advances in science and technology and polluted sea water has had an immensely harmful effect on fisheries as well as human health. Hence this problem has become a major concern to most marine countries.

The cause of sea pollution are numerous, but a major cause and a most menacing threat is oil.

Ours is an oil exporting country which is at the same time dependent for its nutrition on fishery resources. Pollution, therefore, must be viewed by the UAE as a problem with various dimensions specially one that has a direct bearing on the livelihood of a major sector of the national labour force – the fishermen.

On the shores of Al Jumeirah in Dubai, four fishermen explained their worries and anxieties. There was a time when half an hour's sailing took them to fishing grounds where they were almost guaranteed a rewarding catch. Today they have to sail an hour and half before they reach a fishing spot and before long it may take three hours.

The reasons are many, but the most important is the residue of oil left by sailing oil tankers.

The oil residues flot on the water surface creating oil slicks. As the fish live on food which found in the upper layers of the sea and the oil slicks constitute a barrier to the food, the fish is driven from their normal grounds.

The fishermen's problem is made worse that the floating oil does not only drive the fish further into the sea but also damages their fishing nets. The nets, affected by oil, wear out faster and add to the equipment costs of the fishermen.

What is more, waste from ships in the form of empty cans, pieces of wood and other items frequently damages the propellers of fishing vessels.

Such were the direct complaints of the fishermen regarding the harm pollution does in their work field.

At the ministry of Agriculture and Fisheries where the issue was submitted to the fishing resources expert Dr. Rada Mostafa, the problem was reviewed with a scientific approach.

Dr. Mostafa explained that the effect of pollution on sea water varies with the type of materials causing it. Thus, we find chemicals from effluents of various industries, sewage disposed of by the municipalities, oil and other pollutants in the sea.

Fish have a degree of immunity with which they can survive an acceptable amount of pollution but when this is exceeded the fish suffocates due to decrease of oxygen in the water.

The fish can also be affected by other side effects of pollution which harm the body of the fish or the nutrition on which it feeds.

"The harm is there and growing", Dr. Mostafa said.

As for the solutions, they are obvious, he declared.

Effective legislation to protect our shores from pollution was one of them, but legislation can be of no effect if we lack the organizations to oversee its implementation. Such organizations in our country are non-existent, he pointed out.

When Dr. Mostafa was asked how much ground the State has covered in confronting pollution, he replied that up to the present day there are no adequate studies in any Gulf country on this issue. However, he added, the UAE has come to an agreement with the other Gulf countries to frame an ambitious program to deal with the effects of pollution on marine environment in accordance with the Kuwait accord on the protection and development of the marine environment. Such a program should take shape soon.

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LACK OF FUEL CREATES SUBSTANDARD SANITARY CONDITIONS

Accra GHANAIAN TIMES in English 11 Apr 80 p 1

[Text] The Ghanaian Times has just tumbled on a piece of information which explains why refuse has kept on piling everywhere and night soil disposal been a problem for some time.

The information also arouses a strong sense of foreboding--an outbreak of epidemic might, very soon, not be a mere threat, it would be real.

We have just been informed by the Accra City Council that the putrid stench issuing from piled-up rubbish and night soil has been the result of the council's inability to come by gas oil and engine oil for its refuse trucks and cesspit emptiers.

The trucks are, at the moment, idling at the council's Mechanical Engineering Workshop at Kaneshie. A section of them are pictured above.

And a city is crying daily for help from above.

What does primary health care mean, if its strongest appeal is not the prevention of disease? If everyone will sweep his house, the city will be clean, so goes the campaign. Who is not keeping the city clean in the first place? Who is polluting the cities? Are we trying to confirm the fear that the rubbish which civilization has created is burying civilization?

A system could be worked out by which the ACC could be given special allocation of the gas and engine oil. This is a must.

Meanwhile, people are digging trenches near their houses for the purpose of disposing of night soil. The conservancy labourers are not working, they say.

A topic for discussion which this suspected industrial action has brought about is whether the country will, in future, be able to pay or satisfy the demands of conservancy labourers.

Is it not possible to enforce the regulation that landlords should convert their own latrines into water closets?

CSO: 5000

UDC 621.311.22:662.613.13.004.82

NEW ASH REMOVAL TECHNOLOGY FOR THERMAL POWER STATIONS

Moscow ELEKTRICHESKIYE STANTSII in Russian No 2, Feb 80 pp 14-17

[Article by I.N. Keytel'gisser and I.I. Mnushkin, candidates of technical sciences;and engineers A.M. Popov, V.M. Oganov, and A.N. Belov, UkrNIIugleobogashchenie, Dnepropetrovsk Institute of Mining and Pridneprovskaya GRES]

[Text] The need to protect the environment focuses attention on the development and introduction of technological processes that reduce industrial wastes and maximize their utilization. This statement applies in full measure to thermal power stations which produce a large amount of fly ash (wastes); the latter is a valuable product which does not get its proper utilization due to the amount of flammable material in the ash.

Due to the incomplete mechanical combustion of coal in boiler furnaces, the fly ash contains 4 percent to 20 percent flammable mass, and the fuel loss increases as the transformation of the coal increases. Thus, an analysis of the operation of the country's TES indicates that the amount of flammable material in fly ash from the burning of anthracite dust reaches 12-20 percent [Ref 1]. Such a ratio of flammable to mineral parts in fly ash retards its processing and use.

Attempts have been made, for example, to burn up fly ash directly in boiler furnaces or in cyclone prefurnaces. A drawback of this method of utilizing ash is the necessity of constantly expending a large amount of fuel oil to maintain the required temperature and the increased heat loss with the slag due to the high ash content of the combustible product.

An experiment to burn up the by-products in furnaces with the production of ash gravel indicated that a reduction of the flammables in the by-products to 2-4 percent involves a number of difficulties. This factor retards the production of a valuable structural material.

Along with the separation of the fly ash into flammable and mineral portions, the country's workshops could produce millions of tons of fuel for a repeat burning in the boiler furnaces and fly ash that is free from the combustible mass and is a valuable resource for making structural materials.

In the present paper[1] we consider the problems of the utilization of fly ash when it is first enriched by the flotation method. This method is based on the difference in the wettability of the mineral pulp components [Refs 2, 3].

The preferential adsorption of the collector (kerosene) on the carbon fraction makes the surface hydrophobic and facilitates the dispersal of the carbon particles into a valuable product in the flotation machine. Along with the collector, a foamer (T-66) is used as a flotation reagent to produce a stable foam. Since the TES wastes are high-ash products, the primary flotation (to obtain a collective concentrate) is supplemented by a rewash flotation, i.e., a secondary flotation of the collective concentrate.

This process has been developed to obtain boiler fuel and raw material for structural materials from ash. The Pridneprovskaya GRES is a typical electric power station burning anthracite dust.

Development and Testing of the Concentration Technology

A study of the material composition of fly ash (glass beads are 68 percent, carbon particles 24 percent, quartz and cristobalite 4 percent, carbon silicate cake 2 percent, traces of metakaolinite, mullite 2 percent, and traces of feldspar, calcite, etc), and its fractional (Table 1) and granular (Table 2) composition indicates that the fly ash is in the form of particles with a basic size of less than 100 m and is a mechanical mixture of the mineral and carbon particles: the carbon particles comprise 20-24 percent, and the content of combustible material reaches 60 percent and above.

This distinctive feature of the wastes--the small size of the particles, the size distribution of the combustibles over density fractions lower than 2 g/cm^3, and the presence of the combustibles in the form of free carbon grains causes flotation to be the basic technological process.

A flow diagram was worked out for industrial testing of fly ash enrichment, and the equipment chosen for pilot plant had a productivity of 10 tons/hr for the initial product and was assembled at the Pridneprovskaya GRES.

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[1] Help with the work was given by Yu. L. Marshak, doctor of technical sciences, and S. N. Mironov, candidate of technical sciences, (Dzerzhinskiy Heat Engineering Institute [VTI]).

Table 1.

Fraction density, g/cm^3	Fractional ash composition	
	Yield percent	Ash content percent
less than 1,3	0.2	41.6
1,3- 1,4	0,2	34,2
1,4-1,5	0,2	41,6
1,3-1,6	0,9	34,2
1,6-1,8	6,5	25,2
1,8-2,0	12,0	45.7
more than 2,0	80,0	95,9

Table 2.

Particle glass, mm	Granular Ash Content	
	Yield percent	Ash content percent
0,3-0,5	0,8	95,2
0,2-0,3	0,7	87,2
0,1-0,2	2,9	78,1
0,063-0,1	25,2	88,2
0,04-0,063	24,2	77,5
0,02-0,04	30,6	84,7
0-0,02	15,6	83,7

The pilot plant (Fig 1) includes: a unit for concentrating the hydropulp that includes a pump and 2 cones 350 mm in diameter; a unit for preparing the pulp for flotation that includes 2 batchers for the ADRM reagents (for the collector and the foamer) and a conditioning tank for mixing the pulp with the reagents; a 4-chamber mechanical flotation machine of the FMR-25 type; a unit for dehydrating the flotation concentrate that consists of an experimental 2-disk vacuum filter of the Ukrain type, but with a sectional bath; an RMK-3 vacuum pump, an air collector, a vacuum receiver, and a pump for removing the filtrate.

This setup insures the continuous operation of the pilot plant equipment over a long time-period (the heating season) and provides for a wide range of loads, operating conditions, and product quality necessary for the tests. In all, the plant operated for more than 800 hr.

The industrial research carried out on the plant allowed us to establish the operating parameters of the technological process and to obtain the following concentration results:

--the initial hydropulp of the wastes should contain 200-300 g/liter of solid material, and the hydropulp for the rewashed flotation 180 g/liter;

--the flow diagram for the waste flotation should consist of a primary flotation with the total volume of the chambers according to the load calculations being 4 $m^3/(m^3/hr)$, and a rewash flotation with the same secific load;

--the consumption of the collector (kerosene) in the primary flotation is 3-3.5 kg/ton, and that of the foamer (T-66) is 300 g/ton. The rewash flotation does not use reagents;

--the concentrate of the primary flotation has a fuel content of 35-40 percent; 80 percent of the fuel mass is extracted. The flotation rejects contain 3-5 percent fuel;

--the yield of the rewash flotation concentrate was 20 percent of the initial yield on a device with a fuel content of 55-60 percent; 75 percent of the fuel mass was extracted;

--the moisture content of the concentrate dehydrated in the disk vacuum filter is 23-27 percent; the use of steam makes it possible to reduce the moisture content of the sediment to 16 percent.

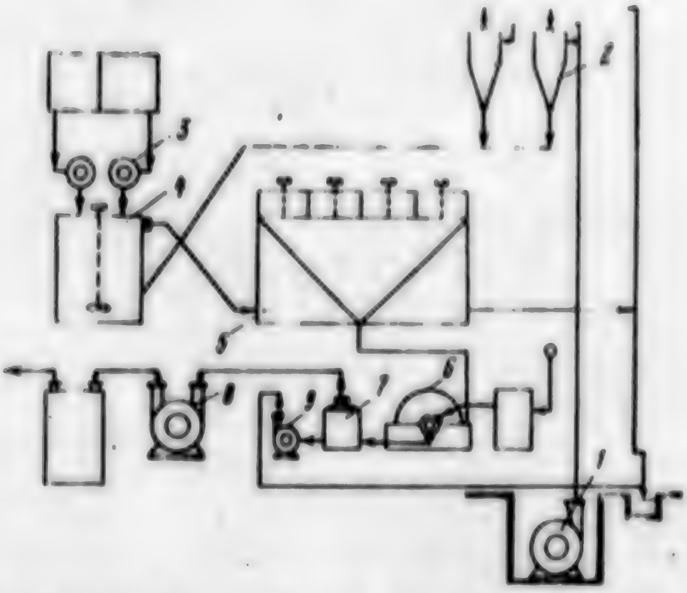

Fig. 1. Flow diagram of the pilot plant for enrichment of GRES ash wastes

Key:

1) 12-GRT pump	6) vacuum filter
2) cone	7) receiver
3) reagent batcher	8) vacuum pump
4) conditioning tank	9) filtrate pump
5) flotation machine	

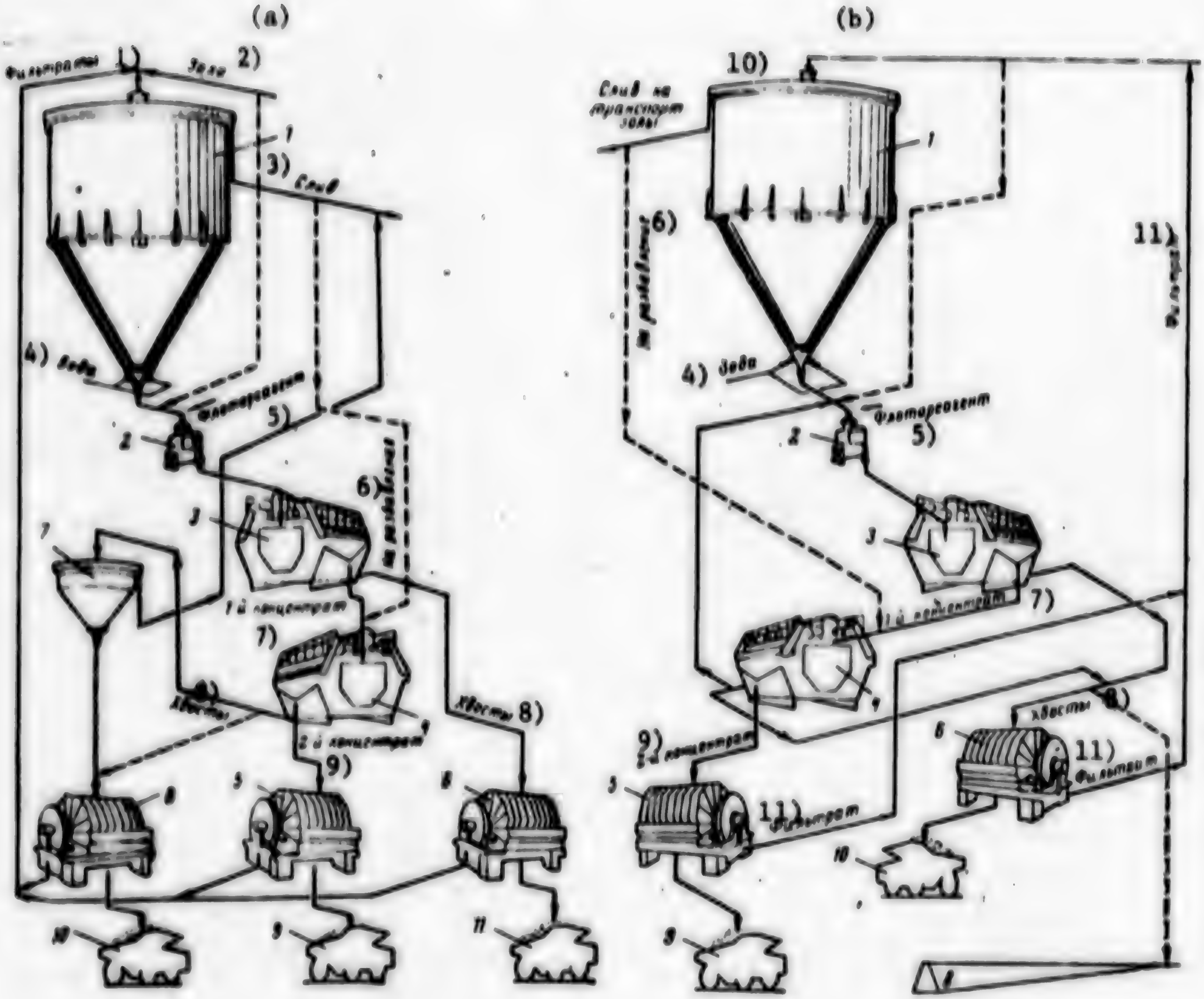

Fig. 2. Flow diagram for enrichment of GRES fly ash: (a) version I (b) version II

Key:

1) sediment compactor
2) apparatus for preparing pulp
3) primary flotation machine
4) rewash flotation machine
5) vacuum filter for fuel
6) vacuum filter for flotation rejects
7) concentrator funnel
8) slag storage
9) boiler fuel
10) raw material for construction materials
11) raw material for ash gravel

1: filtrates
2: ash
3: discharge
4: water
5: flotation reagent
6: to dilution
7: first concentrate
8: rejects
9: second concentrate
10: drain for ash removal
11: filtrate

On the basis of the results of the industrial tests, the technology for a waste enrichment department was developed for the Pridneprovskaya GRES, and it can be extended to other electric power stations operating on coal of the ASh grade.

Figure 2 shows two versions of the flow diagram for waste concentrate, which differ in that version I provide three, and version II two, end products. The composition of the basic equipment, its productivity, dimensions, and mass are shown in Table 3.

Table 3.

Equipment	No of Units	Productivity	Dimensions, m			Mass of Units, ton
			H	B	L	
Sediment compactor	2	18 $M^3/(M^2\cdot hr)$	15	10	--	39
Apparatus for preparing pulp	2	880 M^3/hr	3	2	2	3-4
FMU2-63 machine for primary flotation	7	4 $M^3/(M^3\cdot hr)$	3	3	13	26
Same for rewash flotation	3	4 $M^3/(M^3\cdot hr)$	3	3	13	26
Vacuum filter for fuel	4	0,23 $T/(M^2\cdot hr)$	3	3	6	11
Same for flotation rejects	7	0,50 $T/(M^2\cdot hr)$	3	3	6	11

Table 4.

Product	Version I			Version II		
	Yield percent	A^c, percent	W^p, percent	Yield percent	A^c, percent	W^p, percent
Fuel	18,7	42,0	16,0	20,9	40,5	16,0
Raw material for ash gravel	73,4	97,2	16,0	79,1	95,5	16,0
Same for construction materials	7,9	86,0	16,0	--	--	--

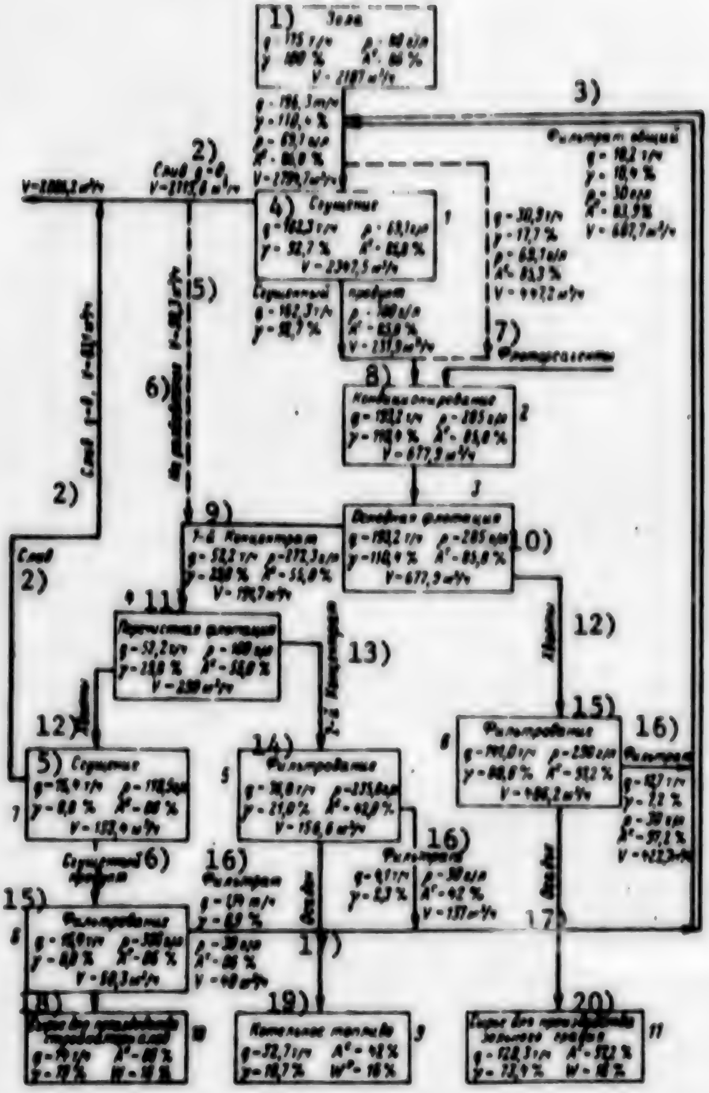

Fig. 3. Qualitative and quantitative diagram of concentration of GRES fly ash (version I)

Key:

1) ash
2) discharge
3) total filtrate
4) concentration
5) concentrated product
6) to dilution
7) flotation reagents
8) conditioning
9) first concentrate
10) primary flotation
11) rewash flotation
12) rejects
13) second concentrate
14) filtration
15) filtration
16) filtrate
17) sediment
18) raw material for construction material
19) boiler fuel
20) raw material for ash gravel

units: t/4 = ton/hr
г/л = g/liter
m^3/4 = ^{3}/hr

Common to both versions is a unit for concentrating the ash wastes into hydropulp until the solid component is 250-300 kg/m^3. When dry ash is delivered by the power stations, the concentration unit should be replaced by a unit mixing dry ash with water. The concentrated hydropulp is conditioned by reagents (kerosene with 3.5 kg/ton and T-66 with 300 g/ton) and is sent to the flotation unit.

The first-stage flotation machines yield two products--ash wastes and carbon concentrate. The carbon concentrate is sent to the second-stage flotation. Two products again issue from the second-stage flotation--a final carbon concentrate and a semifinished product which is the end product for version I, but in version II it is returned to the primary flotation and rewashed.

All the products obtained by flotation are dehydrated in disk vacuum filters with steam used to reduce the moisture content of the sediment. The flow diagram shown in Fig. 3 insures the quality of the end products characterized by the data in Table 4.

The concentration department is equipped with mass-produced high-productivity devices.

Quality of the End Products and Their Use

During the concentration of fly ash, as already noted, two or three end products can be obtained--a carbon concentrate and the discharge of the primary flotation or the first two and the discharge of the rewash flotation. The carbon concentrate has the following characteristics: ash 40-42 percent; reduced ash 10.6-11.4 percent; moisture content 16 percent; reduced moisture content 4.3 percent; combustion heat 3680-3770 kcal/kg; fly ash turned into fuel mass 1.5 percent; residue on screen R_{90} is 25 percent; residue on screen R_{200} is 7 percent.

Compared with the initial fuel burned by the Pridneprovskaya GRES, the concentrate has a considerably higher reduced moisture content (W^{red} = 4.3 percent) than the planned fuel (W^{red} = 1.3-1.4) and the fuel actually delivered to the GRES in 1975 (W^{red} - 2.4 percent). The reduced ash content of the concentrate is also higher: A^{red} = 10.6-11.4 percent (planned content is 3.1-3.3 percent and actually delivered during 1975 is 5.9 percent).

The residue on screen R_{90}, which is 25 percent for a yield of volatiles in the concentrate of 1.5 percent, indicates the need for additional pulverization. However, this concentrate coarseness is obtained by using cones as the concentrators in the pilot plant. The concentration department should use a gravity-type concentrator to obtain a concentrate conditioned according to coarseness that does not need further pulverization.

The concentrate can significantly reduce the heat loss due to mechanical underburning q_4 with ASh coal. If the fuel content in the wastes of the Pridneprovskaya GRES is $\Gamma_y = 14$ percent and it is referred to the average quality of the fuel during 1975 ($W^p = 11.3$ percent, $A^p = 27.3$ percent, and $Q^p_{und} = 4640$ kcal/kg), then the following values are obtained: losses q_4 equal 6.7 percent (the slag-trapping factor in the furnace is $a_{sl}=0.1$); the amount of concentrate per 1 kg of fuel consumed (the efficiency of the ash traps $\eta_{at}=0.95$, and the concentrate yield is roughly 0.20 of the amount of trapped ash) equals: $q_{con}=0.20(1-a_{sl}) \cdot \eta_{at}A^p/100-\Gamma_y=0.20 \cdot 0.9\times0.95 \cdot 27.3/100-14=0.054$ kg/kg. The combustion heat of this concentrate is about 4 percent of that of the initial fuel. Thus, burning the concentrate can reduce the loss q_4 roughly by 2/3. Although the value $q_4 \approx 6.7$ percent may be somewhat too low, the possibility of such a reduction for ASh coal merits serious consideration.

Buring the concentrate under the conditions of the Pridneprovskaya GRES can be considered a possible method of adding it to the primary fuel in the fuel supply system. With allowance for the abovementioned features of the heat and mechanical characteristics of the concentrate and the poorer quality of the initial fuel compared to the planned quality, we recommend that a small amount of fuel be added--on the order of 5-6 percent. The addition of concentrate to the primary fuel in this amount with continuous feeding does not produce important changes in the operation of the boiler plant.

The waste of the primary flotation with a combustible content of not more than 3-5 percent is a high-grade raw material for producing ash gravel and also, according to the requirements developed by the All-Union Institute of Building Materials [VNIIstrom], is suitable for producing cinderblocks and silicate bricks. The flotation waste has the following chemical composition: $SiO_2=51.0$ percent, $Al_2O_3=22.0$ percent, $Fe_2O_3=11.3$ percent, $FeO=0.9$ percent, $MgO=2.0$ percent, $CaO=3.6$ percent, $Na_2O+K_2O=3.3$ percent, and the losses due to heating are 3-5 percent.

The semifinished product, which is the waste from the rewash flotation (version I), with a combustible content of 14 percent can be used to produce clay bricks, where the presence of this amount of combustibles is desirable.

Economic Efficiency of the Concentration of Fly Ash

In calculating the economic efficiency, two operating modes are considered: the first runs only in the fall-winter season, i.e., only with freshly produced ash; and the second is during the whole year, i.e., with fresh ash during the fall-winter season and with ash from the dump during the remaining time. Thus, not only are the operating expenses reduced by a factor of 1.6 when the department operates only in the fall-winter season, but the economic efficiency is lowered by a factor of 2.3 (Table 5). The main part

Table 5.

Indicator	Version I		Version II	
	Second mode	First mode	Second mode	First Mode
Annual projected power of ship with recycled ash, thousand tons	1050	510	1050	510
Yield of marketable production, thousand tons	1050	510	220,2	106,9
Capital investment in concentration plant, thousand tons	1096,16	1096,16	843,18	843,18
Operating expenses for concentration, thousand R/yr	639,9	403,7	452,2	292,4
Production cost of concentration, R/ton	0,60	0,62	0,45	0,57
Sale value of the commodities, thousand/R	2624,7	1274,7	1942,2	943,3
Profit, thousand R	1985,8	870,9	1490	650,8
Recover, yr	0,55	1,26	0,56	1,30

of the operating expenses results from the electrical power with 47 percent and the materials with 25 percent; wages comprise only 5 percent.

Due to the utilization of all the concentration products, the department's profit can be quite significant and amount to 1500-1900 thousand R for operation over the entire year and 650-870 thousand R per year for operation in the fall-winter season, which means that expenses are recovered for 0.5-1.3 year.

Conclusions

1. The technology developed for concentration and utilization of ash wastes from electric power stations buring hard coal or the ASh grade yields additional boiler fuel and the raw material for manufacturing construction materials.

2. Tests of the pilot plant for concentration of ash wastes at the Pridneprovskaya GRES have confirmed the efficiency of the installation. The products obtained have the following technical characteristics: flotation concentrate with an ash content of 40-45 percent, combustion heat 3700 kcal/kg; primary flotation wastes with an ash content of 95-97 percent.

3. The economic effect of the concentration of ash wastes is 650 to 1900 thousand R per year, depending on the operating conditions of the department.

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9370
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BRIEFS

PLANKTON RESEARCH CENTER--A scientific research center for the study of Baltic plankton has been built in Szczecin, Poland. Plankton is very sensitive to the contamination of sea water. By studying the amount and condition of the plankton, one can determine the condition of the sea. Constant monitoring is especially important for the Baltic, since many industrialized cities are situated around its banks and, furthermore, intensively-used sea routes are located there. [Text] [Moscow VODNYY TRANSPORT in Russian 3 Jan 80 p 4] 9370

AUTOMATED POLLUTION MONITOR--The construction of an automated system for monitoring the state of the atmosphere and hydrosphere has begun in Tbilisi. The automatic water-sampling stations, the fixed posts, and the mobile laboratories making up the system provide a basis for a practical response to possible violations of the allowed concentration levels. General information on the indicators determining the quality of the air and water will be transmitted along communication lines to the analysis center. The order for the automated system was given by the Gruzinskiy Republic Administration for Hydrometeorology and Monitoring the Natural Environment, and it was developed in the Tbilisi Scientific-Industrial Association, Analitpribor. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 26 Dec 79 p 1] 9370

CSO: 5000

STROVOLOS DISTRICT THREATENED BY FLOODS

Nicosia TA NEA in Greek 5 Apr 80 p 3

[Text] A harbor above a river is actually something unheard of. But a harbor-city within a river is something which can happen, particularly in Cyprus. A classic example is the case of Strovolos which, with the first rains, becomes impassable. One needs a boat to leave wherever he is located.

Then one considers that just 30-40 meters from flooded Strovolos is the Pedieios River which in such circumstances is dry. How can this happen? Very simply, Strovolos Avenue which is parallel to the river and where the problem is sharply presented, once happened to be dug up for laying of underground cables of the Electricity Authority and CYTA [Cyprus Telecommunications Authority] and water pipes; as a result, the Strovolos Council is now thinking of building bridges to solve the problem and stumbling against the mechanisms of the Electricity Authority, CYTA and Water Supply which are alleging problems of an economic nature and others.

Aside from the daily winter floods in Strovolos, its suburban inhabitants also suffer from the garbage dump in Tseri. In a little while the flies, which are usually the size of wasps, will begin to annoy the inhabitants, endangering the health of the approximately 55,000 inhabitants of the largest suburb in the capital.

Great crowding is observed in the suburb's schools (demotic and gymnasium) because of the lack of planning which usually distinguishes government works, particularly refugee housing. This problem became more acute after the creation of two refugee settlements, the rapid development of Strovolos after the invasion and the necessary turn people took to this area.

The oldest of the parish presidents from the Strovolos parishes, Khryseleousi Parish President Khatziiosif, spoke to our writer Foivos Prastitis in more detail about the problem:

Strovolos is subdivided into six parishes as follows: Khryseleousi; Agios Vasileios; Agios Dimitrios Akropolis; Dasoupoli (Apostolos Loukas and

Agios Makarios); Settlement 11 (Arkhiepiskipos Ethnomartus Kyprianos) and Settlement 111 (Stavros). About 50,000 inhabitants live in the first four parishes while the Strovolos settlements include 700 inhabitants in 11 and 500 in 111; yet another settlement named Kokkinas is being constructed in Strovolos (near the gymnasium).

The area of Strovolos covers 10 square miles.

The Floods in Strovolos

Floods have begun to be created in Strovolos since the time when the Anglikí Skholi hill was inhabited up to Settlement 111. This area was previously an agricultural area and the rain waters were absorbed. But after inhabitation, the rain waters are making a path to the center of Strovolos.

Usually the floods, which are a daily phenomenon in winter, show up at six points on Strovolos Avenue which happens to be parallel to the Pedisios and is only 30-40 meters from it. There is a question of why these waters which flood the road do not fall into the river. Very simply, there are no bridges, ditches or drains to cast it into the river. Why are they missing? At one time, Strovolos Avenue had been split horizontally and electricity and CYTA cables were laid. There are also water pipes to supply water.

The Strovolos Council applied many times to the government seeking a solution to the problem because Strovolos Avenue is not a community road. It is a government road which connects Pitsilia with Nicosia and as a result any work on the avenue must be done by the government, more specifically, by Public Works.

Our steps began 20 years ago and nothing has been done yet. Sacred promises are given which, in the end, prove to be empty.

The Tseri Garbage Dump

The garbage dump in Tseri is also a great danger to the health of Strovolos inhabitants. This is clearly a health problem and we are of the opinion that the government instead of, for example, building a hospital costing six million pounds to safeguard the people's health, should build a hospital with half the money and use the rest for a radical and definite solution to the garbage problem.

In what way can this problem be solved? We have many professionals. By visiting other European countries, they could convey various ideas and set up special studies not only for break-down of garbage but also its utilization.

The problem dates back 20 years and is seen in all the cities in Cyprus. As a result, the problem is not solved by transporting garbage dumps from one site to another, but with special programming.

The garbage dump problem is made even more serious by the emptying of about 130 car loads of garbage a day on it.

The Bridge-One-Way Street

Rapid development in Strovolos has created a serious problem relating to the narrow bridge covering the Pediaios next to the Second Demotic School at Klimataria. When the bridge was built, other data were predominant, but now there is need to widen it. The council is studying the matter.

As concerns the other three bridges which are sunk in the Pediaios, they are very beautiful and servicable 360 days a year and dangerous the other five (when the river goes down). They have become so for economic reasons and, for public safety, three to four days a year, the roads are closed and others, like the other two bridges (on Proedrikou and the bridge being considered for widening) are used.

The Tannery

The tannery located on the Nicosia-Limassol road near Strovolos Settlement 111 is a serious problem for the inhabitants around the area and at the mental hospital. About three million pounds were spent to build the mental hospital; there are many inmates and personnel in it. The tannery opposite emits filth and foul smells dangerous to the health of inhabitants in the area.

It is also a great problem for travelers on the Nicosia-Limassol road. You hold your nose while passing even if you close your car windows.

Removal of the tannery to another site which will not be bothersome is urgent.

Access Roads

Great traffic congestion in Strovolos is due to the fact that the refugee settlements are linked only to Strovolos; inhabitants of the settlements who want to travel to Larnaca, Limassol or Paphos must first pass through Strovolos and then enter the main road.

Access roads must be built from the settlements to the main Nicosia-Limassol road, which is closer to the settlements than to Strovolos.

The same must occur in the case of Makarios stadium. The roads should be widened and asphalted.

With the building of the settlements, a huge problem was created in the schools which either need to be expanded or new schools need to be erected. In addition, the plan of building a gymnasium in Anthoupolis will have to be promoted so that the Strovolos gymnasium can be decongested. Moreover, for decongestion in the Strovolos demotic schools, the restoration of morning and afternoon classes is suggested.

The Roads

AIK [Cyprus Electricity Authority] and CYTA have been found on many Strovolos roads for some time. The work of these two organisations is now proceeding to the center of the suburb and several problems are expected to arise from the ripping-up of the road.

There is a suggestion that a coordinated CYTA-AIK-Water Supply office be created to coordinate and program their works so that excavation of a road will not begin as soon as it is finished by another organisation.

In addition, a special work group must be formed by these organisations which will follow them and asphalt cracks in the road surfaces. As for the economic problems in such a case, this is a matter which can be solved.

A fairly large problem is being created for Strovolos by the sale to the public of parcels of land having no roads (crossings) water or stream. Those who earn huge profits from the sale of land must be called to build these roads; Strovolos must not be shouldered with this burden.

Strovolos is planning an improvement in the lighting of the suburb's central roads. The plan will be long term. As concerns this problem, Strovolos suggests that, to save energy, the lights be turned on one hour later and turned off one hour earlier.

Strovolos is paying around 30,000 pounds a year for lighting the roads. In addition, about 50,000 pounds will be spent this year to repair suburban roads. The Strovolos budget this year comes to 200-220,000 pounds--40-50,000 pounds for development, asphalting and other works and around 150,000 pounds for electrification, annuities, sanitation, employee salaries and other expenses.

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PRODUCTS CONTROL BOARD URGES RESTRICTIONS IN FOREST SPRAYING

Stockholm DAGENS NYHETER in Swedish 3 Apr 80 p 8

[Article by Thomas Michelsen]

[Text] Soon after Easter the Products Control Board will decide on new restrictions on phenoxy acids. The reason is new research results on the cancer risk involved in using phenoxy acids. The new rules are aimed at providing better protection for workers who come in contact with phenoxy acids.

The government has already decided to ban aerial spraying of phenoxy acids over forests for the next year. The Products Control Board's new rules will primarily apply to all forest spraying of phenoxy acid from the ground.

Products Control Board division chief Rune Lonngren told DAGENS NYHETER that he does not expect the new rules to change the total amount of phenoxy acid used in Sweden to any great extent. There should be some reduction however.

Phenoxy acid is used in forests in a number of different ways. From the ground the poison can be sprayed from a knapsack sprayer or from a tractor-mounted sprayer. And sometimes the poison is poured directly on trees. Now certain restrictions will be placed on these methods by the Products Control Board.

But it is also possible that parliament will limit or ban phenoxy acid spraying from the ground. There are motions calling for an expansion of the government ban on aerial spraying to include spraying from the ground.

The current discussion on phenoxy acid is concentrated almost entirely on forest spraying. It is centered on the risk to workers doing the actual spraying, the risk to the general public of being sprayed from the air and the danger involved in eating berries that have been sprayed.

In forestry phenoxy acid is one of the methods used to remove undesirable deciduous trees, weed trees.

But many times more phenoxy acid than that is used each year in agriculture. It is one of the most widely-used herbicides. In 1978 from 70 to 80 tons were used in forestry. In gardens, for instance around family homes and summer houses, between 10 and 12 tons were used. Over 2100 tons of phenoxy acid were used in farming. These figures are in terms of active ingredients. When sprayed the herbicide is usually diluted with water to twice this amount.

The large quantities of phenoxy acid used in agriculture are not affected by the government ban on aerial spraying or by the new rules issued by the Products Control Board. Even if there is a ban on spraying 70-80 tons of phenoxy acid in the forests this summer over 2000 tons of the same chemical will be spread over farmland in the same period.

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RIKSDAG BILL WOULD STOP FOREST SPRAYING AGAINST PEST

Stockholm DAGENS NYHETER in Swedish 26 Mar 80 p 6

> [Text] It seems more like political tactics than concern for the forestry branch, representatives of the forestry industry said of Agricultural Minister Anders Dahlgren's provisional ban on aerial spraying.

The proposal to ban aerial spraying of forests against undergrowth, a ban that would be temporary, will be presented to parliament on Tuesday by Agricultural Minister Anders Dahlgren (Center). The law would be in effect until 1 July 1981 in anticipation that a study on control measures used in forestry and agriculture will be ready by then.

The ban will go into effect as soon as parliament approves the resolution, in other words during the early summer before this year's spraying season begins.

"I hope the study will be conducted in such a way that the provisional ban can be replaced by a more long-term solution next year," Anders Dahlgren said. "The goal should be to avoid the use of chemicals in forest management as much as possible."

Director Lars Sjunnesson of the joint forestry industry committee was critical of the bill. "It looks as if the actions of the agricultural minister with regard to chemical control measures are dictated more by tactical political considerations than by concern for the forestry branch," he said.

"The decisive question is whether phenoxy acid as used in Swedish agriculture and forestry is dangerous or not. The Conservation Board recently told the current committee investigating these methods that 20 years of studies had not indicated the need for a ban on phenoxy acid in forestry," Sjunnesson said.

The Crown Forest Agency reported that in its work area a permanent ban on aerial spraying would mean the loss of 100 jobs a year in interior Norrland, increased costs of 45 million kronor and profits at only half current levels. But the agency would have to recruit 100 new workers in southern Sweden.

A temporary ban like the one proposed by the government would not pose any short-term economic problems in the opinion of the Crown Forest Agency. This is because there probably won't be time to organize and train a labor force for manual clearing during 1980. Apparently there are problems in recruiting people for the demanding single-handed forest clearing work.

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STUDY SHOWS MOST UNAWARE OF MEASURES TO REDUCE LEAD IN GAS

Stockholm DAGENS NYHETER in Swedish 2 Apr 80 p 13

[Text] A majority of Swedes feel that entirely leadfree gasoline should be introduced either now or when the economy improves. But at the same time only a fraction knew that close to two-thirds of the lead in gasoline would be eliminated through implementation of measures that have already been passed. These are some of the results of a SIFO [Swedish Institute for Public Opinion Polls] survey made at the request of the Automobile Industry Association.

At the beginning of this year the lead content of regular gasoline was reduced from 0.40 to 0.15 grams per liter. Next summer--1 July 1981--a similar reduction will be made in premium gasoline. After that time only low-lead gasoline will be sold in Sweden.

"This means that lead emissions in car exhaust fumes will be at least 60 percent lower in 1982 than in 1979 and that we have already made a big step in this direction," the association pointed out.

But the Swedish people--represented by 1031 people in the SIFO study--do not believe lead emissions will decline that much. Only 2 percent of those interviewed thought more than 60 percent of lead emissions would disappear, with 8 percent answering from 41-60 percent.

Director Lars Nasman of the Automobile Industry Association said: "Many people are now demanding further steps against lead in gasoline. The strange thing is that they have no idea what steps have already been taken."

According to SIFO 32 percent want completely leadfree gasoline and special exhaust filtering systems to be introduced immediately. Another 19 percent are in favor of such measures but can wait until the Swedish economy improves. The present regulations are adequate according to 31 percent while 18 percent were undecided.

Lars Nasman said at a press conference in Stockholm on Tuesday that car manufacturers within EEC had expressed grave doubts concerning the proposals on leadfree gasoline that are being made in Sweden.

"The small but most fuel-efficient vehicles which do not normally turn up on the U.S. market could no longer be offered on the Swedish market. Swedish cars that can only run on leadfree gasoline would have limited usefulness since driving outside the Swedish borders, where that type of gasoline is not sold, could damage the exhaust filtering system," European car manufacturers said in a statement.

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STUDY SEES DISEASE DANGER IN COPPER WATER PIPES

Stockholm DAGENS NYHETER in Swedish 2 Apr 80 p 10

[Text] Malmo--There is a clear connection between copper deposits in water pipes and stomach illnesses such as diarrhea, especially in young children. A study made by city doctor Jerker Nermark of Lund has shown that. For 2 1/2 years he observed 90 new houses and studied about 200 people, mainly in the Nobbelov district where copper deposits were first observed and where several children have had stomach upsets due to the water.

"The reason we suspect copper to be the culprit is that it is the only factor in the water that is elevated," said Dr Nermark.

More than half the children studied who drank the water have had long-lasting problems--we're talking about months. Boiling the water, for example in making porridge, has not helped any.

The water-softening systems that are often installed to take care of the very hard water in Skane have only made the situation worse: when lime is removed from the water it no longer forms the layer on the inside of the pipe that in this case is protective, instead even more copper is precipitated.

Dr Nermark feels that the reason the connection between copper pipes and stomach upsets has not been discovered before this is that now so-called soft copper pipes are being used and they have a greater tendency to lose copper than the old harder pipes. Copper has become more aggressive in this way.

"The type of diarrhea and stomach colic caused by copper does not seem to be directly harmful," Nermark said soothingly in conclusion. So far no serious cases of poisoning have been reported.

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ENVIRONMENT AGENCY STUDIES FREON USE IN INDUSTRY

Stockholm DAGENS NYHETER in Swedish 27 Mar 80 p 11

[Article by Hans Kronbrink]

[Text] Tons of the environmentally damaging gas freon are used each year at the Volvo Ume plant in Umea. The gas is used to test gasoline tanks and is then released into the air.

Freon gas was banned 2 years ago as the propellant in spray cans. The gas breaks down the vital ozone layer in the atmosphere which protects us against excessive ultraviolet radiation.

Swedish industries can still use freon relatively freely. The only requirement is that such use be reported to the county government.

But the reports of using freon for pressure tests according to the method used at the Volvo Ume plant are quite new as far as the Products Control Board of the Environmental Protection Agency is concerned.

"We will be taking a closer look at this form of use to see how common it is in industry," Ingrid Jedvall of the Environmental Protection Agency told DAGENS NYHETER.

When we got in touch with the Volvo Ume plant we were told that the method is an old and well-tested one and that it is used in many areas of Swedish industry.

Around 2000 tons of freon gas are used annually in this country in such areas as plastics production and the manufacturing of air conditioning systems, heat pumps and cooling systems.

Before its use was banned in spray cans that use was responsible for around half the total freon emission.

"But the gas used at the Volvo Ume plant is released directly into the air, making it different from gas used in such things as plastics manufacturing," Ingrid Jedvall said.

The emission from the Volvo plant corresponds to using around 8000 spray cans a day.

The Environmental Protection Act makes industry an exception with regard to freon gas use. But the Environmental Protection Agency can still make stringent requirements about how it is handled.

"If we feel it is necessary we can require filters and special chimneys, for example," said Ingrid Jedvall.

New Reports

New reports on freon gas have shown that it is much more dangerous than we believed when it was banned in the United States and Sweden, the only nations so far to ban the spray gas.

In our atmosphere, about 30 kilometers from the surface of the earth, there is a broad layer of ozone, a form of oxygen. It "filters" the ultraviolet rays of the sun which can have a carcinogenic effect in large doses. Freon gas breaks down that protective layer.

In April a big congress on these matters will be held in Oslo. The first objective will be to get more countries to ban the spray gas but the next step would be to ban other uses as well.

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BRIEFS

VOLVO HALTS FREON USE--"We have abandoned our efforts with freon gas after all the commotion in the press," said information director Hans Oberg at the Volvo Ume plant with reference to yesterday's article in DAGENS NYHETER on the firm's use of the environmentally hazardous gas. "We are now waiting for an evaluation of the method which is otherwise quite suited to our production but we will also test other gases out of consideration for the environment," Hans Oberg said. The Volvo Ume plant bought the method from a Swedish company that will now go through the results of tests in which 3 kg of freon gas were used. Hans Oberg stressed that using freon did not violate any laws. "The ban applies only to spray cans. In industry it can be used," he said. [Text] [Stockholm DAGENS NYHETER in Swedish 28 Mar 80 p 35] 6578

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